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Russell County Getting Thorough Test Four Wells In, 22 Drilling

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STAFF REPRESENTATIVE

TULSA, July 25

HAVE you ever been in the stone fence post country of western Kansas? If you have been out to Russell county, there would be no need to ask that question, for if there is one thing that country has in abundance, it is stone fence posts. Every road is lined with them on both sides, every farm, and every field of every farm, is outlined with them. To stand on one of Russell county's hills and gaze down over the country-side gives one the impression of being in a great national cemetary, with orderly rows of headstones stretching out in every direction. Russell county is far from dead, however.

It is a good thing for the future oil development of Russell county that the geologists got to work out there before the farmers had finished putting up stone fence posts. These posts are made of the so-called Post limestone, which is a persistent bed lying just under the surface over a great stretch of country, and which serves as an infallible marker for geological work. It has a remarkable uniformity of thickness—about nine inches—and its character is such that it is easily split up into long strips, from which fence posts of uniform length and thickness may be cut.

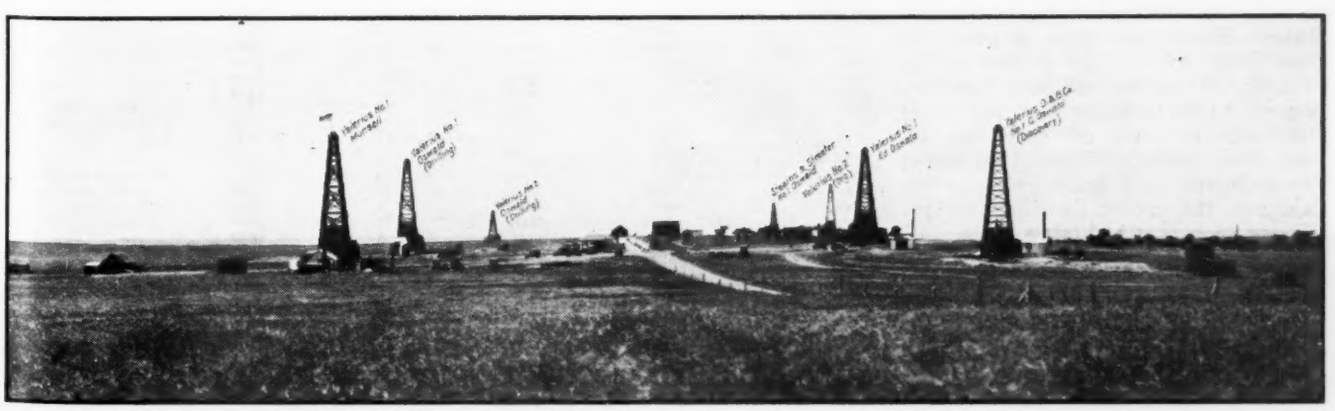
It was this Post lime that revealed the presence of the Fairport anticline, upon which Russell county's first oil field is being developed, and it is the key bed by which numerous other structures in the county have been worked out and now being tested. On every hill side or on the banks of every stream, the Post lime stands boldly out, a white strip as even as if it had been painted on the slope—except where the industrious farmer has gouged it out to serve his boundary marking purposes. Even then, the scar left by his excavations shows where the stone was, and serves the geologist as well.

The Russell county field is a far-flung western outpost of the Mid-Continent field, more than 100 miles from the nearest production hitherto developed; indeed, it is so different in many ways from other Mid-Continent developments that it is possible it should not be classed as a part of that great oil-producing area. It is rather a sort of median between the Mid-Continent and the Rocky Mountain region, at least from a geological standpoint.

As an instance of this, it is stated by Raymond C. Moore, state geologist of Kansas, that rocks found more than 1500 feet down in Russell wells are the same as those on the surface in the El Dorado, Kansas, field while rocks found at the surface in Russell are not present at all in eastern Kansas. Also, the Dakota sandstone, which is productive in the Rocky Mountain region, and is the pay horizon in the new Moffat county field of Colorado outcrops in many places in Russell county, and was found at about 400 feet in the original Russell county well.

The productive zone in Russell county wells has been classed as Lower Pennsylvanian in age, although no definite correlation has yet been made. The surface formations are in the Benton series of the Cretaceous, which is about 400 feet thick. After going through this formation, the bottom of the Dakota sandstone marks the beginning of the Permian, which persists to about 2200 feet in depth (in the discovery well) at which point the Pennsylvanian is encountered. In this first well, the top of pay was found at 2998 feet. The pay formation is a dolomitic lime and not a true sand.

Russell county must be the place that first inspired the descriptive phrase, "a country of magnificent distances"; at



View of the Oswald Pool, looking West

least, that is the impression left upon one who tries to go all over it from dawn to dark, as the writer did. We drove something like 200 miles, my geologist friend and I, and while we may not have walked quite that far, we chased outcrops of the Post lime up and down hill in every direction from the field, it being my host's laudable intention to show me how easy it was to figure out a structure with so infallible a marker. A geologist's life is a great life for those who are used to it. Yes, sir, we rode—and we walked, and we saw millions of stone fence posts and quite a number of derricks.

Russell, which is the seat of Russell county, is 263 miles west of Kansas City on the Union Pacific, and lies in the great open spaces where men are wheat farmers and limestone quarriers. In the intervals of taking care of the wheat crop these men make fence posts by way of diversion, and when they have any stone left over, they use it for building purposes. They begin with the schools, then build churches then the barns, and then the houses, although they have not had time to attend to more than a few of the last-named. By the time they get around to the houses, it is time to put a new mortgage on the old home place and get busy with the wheat again. First it is crops, and then it is outcrops in Russell county. (Terrible, terrible!—Editor)

The coming of oil has proved a blessing to many farmers in Russell and adjoining counties already, and may be the means of lifting them from a long-continued condition of financial difficulties. In addition to the oil, this summer they have high wheat-prices and a wonderful crop to add to their good fortune, and they are more optimistic than they have been for years.

Russell Not Excited

Russell is an old town, having been founded in 1871, when it was for a time the western terminus of the Union Pacific, and is too staid and respectable to allow itself to be stampeded by even so unusual a thing as an oil boom. Farming and county politics share equally with oil in the public-interest, and the air of excitement usually noticed in boom oil towns was distinctly absent when the writer was there. The oil men making the town their headquarters generally stay at the Russell Hotel, and quite a group of them is in evidence for a time in the evening. A number of them, however, seemed to be waiting for the hotel waitresses to come off duty and assume their places as belles of the town; this evidently is a great event of the day, and the crowd dwindled perceptibly as soon as it had taken place.

The field is about 17 miles north and west of Russell, and is naturally the most interesting spot in the county, although drilling tests are under way in all other directions as well. On the way to the field, one is impressed with the wonderfully good roads, which are general over the county. The U. P. highway, which is a transcontinental road, at present thronged with westbound tourists, follows the Union Pacific all the way from Kansas City, and is the main east-and-west thoroughfare through Russell county. The county also maintains its own roads, which are quite as good. We averaged 45 miles an hour all the way to the field, and could have done better if we had been in a hurry.

The great open country and the good roads make it an easy country for oil development. Material can be moved easily to almost any point, while the absence of timber and underbrush obviates the expensive necessity of clearing ground for derricks and buildings. Also, the open country, coupled with the crystal-clear atmosphere, makes it possible to see great distances so that one can almost scout the field from a hilltop if it is centrally located.

The actual oil field so far developed consists of four producing wells and three drilling wells. All of these except one producing well belong to the M. M. Valerius Oil & Gas Co., which drilled the discovery. The one exception is the well of Stearns & Streeter, drilling contractors of Wichita, Kan., who have an 80-acre lease a quarter-mile west of the discovery well. The field is making about 1100 barrels daily at present, although possibly capable of producing considerably more than that, even from its present producing wells. The oil is of 41 gravity or better, although, unlike most other high-grade oils, it is dark in color. It is said to have high gasoline content, and the wells are making rich casinghead gas. When the discovery well came in, its oil was reported to test 34 degrees Faren-

Log of Discovery Well of Russell County Field

M. M. Valerius Oil & Gas Co.'s Oswald Well No. 1
Section 8-12-15, Russell County, Kansas

Nature of Strata	Color	Hard or Soft	Thickness	Total Depth	Remarks
Shale	yellow	soft	15	15	
Shale	brown	soft	145	160	
Shale	grey	soft	20	180	
Shale	blue	soft	35	215	
Red rock	red	soft	42	257	
Sand	brown	soft	6	265	Hole full fresh water
Red rock	red	soft	47	310	
Sand	brown	soft	62	372	
Quick sand	red	soft	8	380	15½"—391
Sand	light	soft	20	400	Base Dakota
Shale	blue	soft	30	430	
Shale	black	soft	90	520	
Shale	blue	soft	10	530	
Shale	light	soft	10	540	
Water sand	light	soft	8	548	
Shale	light	soft	12	560	
Red rock	red	soft	95	655	12½"—645
Sand	red	soft	25	690	Hole full water, salt
Shale	red	soft	220	900	12½ set 901
Lime	grey	hard	50	950	underreamed
Red rock	red	soft	105	1055	
Shale	brown	soft	45	1100	
Red rock	red	soft	80	1180	
Shale	blue	soft	105	1285	
Salt	light	soft	230	1515	10 in. 1535
Shale	grey	soft	30	1545	
Lime	white	hard	40	1585	
Shale	blue	soft	30	1615	
Lime	white	hard	10	1625	
Shale	blue	soft	10	1635	
Lime	white	hard	15	1650	
Sandy shale	grey	soft	5	1655	
Red rock	red	soft	25	1680	
Lime	grey	hard	20	1700	
Shale	blue	soft	35	1735	
Lime	light	hard	15	1750	
Red rock	red	soft	30	1780	
Lime	white	hard	125	1905	
Red rock	red	soft	10	1915	
Lime	grey	hard	10	1925	
Shale	grey	soft	25	1950	
Lime	dark	hard	20	1970	
Shale	red	soft	15	1985	
Lime	white	hard	25	2010	
Shale	blue	soft	60	2070	
Lime	white	hard	30	2100	
Red rock	red	soft	62	2162	Some gas at 2165
Sand	dark	soft	10	2172	Set 8¼ at 2195
Shale	blue	soft	38	2210	Underreamed pipe2296
Shale	light	soft	60	2270	bad cave
Lime	light	hard	5	2275	
Shale	light	soft	10	2285	
Lime	light	hard	15	2300	
Shale	blue	hard	180	2480	
Lime	light	medium	15	2495	
Shale	blue	soft	25	2520	Oil at 2520
Sand	dark	soft	3	2523	Underreamed 8¼ in.to
Shale	blue	soft	113	2635	2526, 3 bailers water
Sand	dark	soft	4	2639	Set 6 in.—2700
Shale	blue	soft	114	2753	Little gas at 2710
Lime	white	hard	42	2795	(Good showing oil)
Sand	dark	soft	7	2802	water
Lime	white	hard	73	2875	
Lime	dark	soft	5	2880	
Sand	light	soft	55	2935	
Shale	black	soft	5	2940	
Shale	light	soft	5	2945	10 bbls. showing
Lime and Sand	light	soft	15	2960	28 gravity (oil)
Shale	brown	soft	28	2988	
Shale	brown	soft	10	2998	Top Sand
1st Pay	3019				
Shale break	3022½				
2nd Pay	3037 T. D.				42.5 gr. oil

heit, the coldest crude ever found in the Mid-Continent. It has since warmed up considerably and now is about 70 degrees F.

Early in the field's development, the Sinclair Pipe Line Co. laid a three-inch line from the field to the town of Paradise, on the northern freight line of the Union Pacific, about 11 miles north and east of the field, and this is still the only outlet for the field's production. From Paradise, the oil is shipped in tank cars to Kansas City. About five cars a day are being shipped out at present. The freight rate of 55 cents a barrel is being absorbed by the purchasing company, and the railroad company is profiting to the extent of about $650 daily. Under the present posted price for Mid-Continent crude, Russell oil is bringing $1.75 a barrel, as compared with $2.25 until July 12.

The first well ever drilled in Russell county was also the one that turned out to be the discovery well of the field. It was a rank wildcat, if there ever was one, a great distance from production, and with not even any nearby dry holes to give a guide as to drilling conditions and probable necessary depths. This well was started in July, 1923, just about a year ago, and got the oil pay on Nov. 28. It is located in the SWc SE¼ of 8-12-15W, and is the No. 1 Carrie Oswald, a lease owned jointly by the H. F. Wilcox Oil & Gas Co. and its subsidiary, the M. M. Valerius Oil & Gas Co.

M. M. Valerius, president of the company that bears his name, is a resident of Tulsa, and for many years has been recognized as one of the Mid-Continent's leading geologists. He has specialized in Kansas geology, and has done a great deal of development work in that state. Although the Fairport structure had been known to geologists for some time, Mr. Valerius was the first to become convinced of its commercial importance. Many geologists were skeptical of the project of drilling in this part of the state, not believing that the structure showed a true reversal.

Valerius Interests Wilcox

Some leasing had been done in Russell county as early as 1917, but no wells were drilled until 1923. A number of Russell men had organized the Lucky Seven Oil Co., and blocked up acreage comprising nearly three-fourth of the township in which the field is located. Valerius took over most of this acreage, and finally succeeded in interesting the Wilcox company in drilling it. The result was the discovery well. Most of the big companies, have taken acreage in the county since the field was opened and several of them have tests now drilling. Trading in leases was brisk for a time, but has quieted down now, due partly to the depression now existing in the oil industry, and partly to waiting for further developments in the field. Outside of the producing field itself, acreage can be picked up generally over the county at reasonable figures.

The first well had a show of oil at 2520 feet, a little gas at 2710 feet, another oil showing at 2795, and still another, estimated good for 10 barrels, at 2960 feet. This was 28 gravity oil. At 2998 feet, the high-gravity pay was encountered. The big pay was found at 3019, a shale break at 3022½ feet, and more pay at 3037 feet, which is the well's total depth at present. There was not sufficient gas pressure to cause the well to flow. After being swabbed for some time, it was put on the pump, and has been pumping about 240 barrels daily for several months past.

Immediately following bringing in of the first well, the Valerius Co. started two others, offsetting the discovery to the west and south, while Stearns & Streeter started one in the SEc W½ SW¼ of 8, a quarter-mile west of the first well. The first of these to come in was the No. 1 Ed Oswald, west offset to the discovery, which got the pay June 7, 1924. It topped the lime at 2990, and has been drilled to 3027 feet. This well also would not flow, but swabbed 1250 barrels in a 19-hour test, and is now pumping about 800 barrels.

Only Well That Flowed

Stearns & Streeter, after getting 7 million feet of gas in their well, May 15, bradenheaded off the gas and drilled on down to the oil pay, which was found at 2958 feet, or 40 feet higher than in the original well. This well is the only one in the field that flowed when drilled in, making about 30 barrels an hour initial with the sand just touched. There being about 143 feet of open hole, cavings caused the flow to cease, and the well is now being cleaned out, preparatory to being drilled deeper. It got the oil pay June 10, 1924.

The next well to be brought in was the Valerius No. 1 Munsell, in the NWc NE¼ of 17, offsetting the discovery well to the south. This well on June 14, 1924, got the pay at 2998 feet, same as in the first well, and was drilled to the same total depth, 3037 feet. It had 1200 feet of oil in the hole at one foot in the pay, but did not flow. It is now on the beam, pumping about 200 barrels.

The Valerius Co. has started three wells recently, two offsetting the Stearns & Streeter well to the east and south, and one offsetting the Munsell well to the west. Of these, Oswald-Valerius No. 2, south of the Stearns & Streeter well, is drilling at 250 feet. The east offset, No. 2 Ed. Oswald, is drilling at 265 feet. Oswald-Valerius No. 1, in the NEc NW¼ of 17, west offset to the Munsell well, is drilling at 450 feet.

Stearns & Streeter were contractors on all the Valerius wells so far completed, and are drilling the new ones. They have 11 strings of tools running in the county at present. Before starting any more wells on their 80, and before putting their No. 1 on full production, they are building a 55,000 barrel tank, having about completed the grade, with tank steel on the ground.

Two Important Wells

Two wells, drilling north and south, respectively, of the field, will have a most important bearing on its future size and area. If these two wells are failures, it is indicated that the field will be of relatively small area, possibly a

Field Operations in Russell County, Kans., as of July 19, 1924

Company	Well No.	Farm	Location	Status
			T. 11, R.13 W.	
Sawtelle et al	1	Pospishill	SEc 13	Rig up and tools
			T. 11, R. 15 W.	
White Eagle et al	1	Dodge	SEc SW 29	Fishing 2550 ft.
			T. 12, R. 11W.	
Ritchey & Moore	1	Dick	SWc NE 23	Spudded and s. d.
Pomeroy et al	1	Cooper	SEc 33	S. D. 1000 ft. for 12 in
			T. 12, R. 12 W.	
Merriam et al	1	Murphy	SWc 11	Drilling 2812 ft.
Suppes et al	1	Miller	SWc 25	Location
			T. 12, R. 13 W.	
Valerius	1	Fairchild	SWc NE 13	Drilling 2010 ft.
Prairie	1	Beatty	SEc SW NE 16	Spudding
			T. 12, R. 14 W.	
Skelly	1	Haberer	NWc SE 14	Drilling 2860 ft.
Lewis Oil Co.	1	Haise	SEc NW 31	S.D.2990 ft. to run 6 in.
			T. 12, R. 15 W.	
Valerius	2	E. Oswald	SWc SE SW 8	Drilling 265 ft.
Valerius	1	Oswald	NEc NW 17	Drilling 450 ft.
Valerius	2	Oswald	NEc NW NW 17	Drilling 250 ft.
Amerada et al	1	Milke	SWc SE SW 20	Fishing 2960 ft.
Producers & Ref	1	Haise	NWc SE 24	Drilling 2922 ft.
			T. 13, R. 13 W.	
Valerius	1	Phillips	SWc 3	Drg. 3540 ft. H.F.W.
Bullock et al	1	Harbaugh	SEc NE 24	S.D.375 Litigation
			T. 13, R. 14 W.	
Prairie	1	Hill	NWc NE 13	Rigged
			T. 13, R. 15 W.	
Patton et al	1	Walbridge	CWL SW NE 4	Drilling 2540 ft.
			T. 14, R. 11 W.	
J. Garfield Buell	1	Diessroth	SEc NE SW 1	Drilling 1300 ft.
			T. 14, R. 15 W.	
Producers and Ref	1	Mermis	SWc SW NE 9	Rigging up
			T. 15, R. 13 W.	
Alcorn	1	Seller	SEc 36	Drilling 1835 ft.

half-mile wide by a mile and a half long north and south. If they are successful, on the other hand, it is not improbable that the field will extend six or seven miles north and south, with indeterminate width. Progress of these wells is therefore being followed very closely.

One of them, the Amerada Petroleum Corp., Stearns & Streeter No. 1 Milke, is nearly at the depth at which the pay is expected, but is held up with a fishing job, having lost a joint of 6-inch casing in the hole at 2960 feet. This well is two miles south and a quarter mile west of the discovery well.

Three miles due north of the discovery well, The White Eagle Oil & Refining Co. et al No. 1 Dodge, is also delayed by a fishing job, and may lose the hole. This well is fishing for 17 joints of casing lost in the hole at 2550 feet, and has had many vicissitudes in trying to recover it. It is located in the SEc SW¼ of 29-11-15.

South of the Amerada-Milke well two and a half miles, and a mile and a quarter east of it, another test is nearing interesting depth and is being watched closely. This is the Patton et al. No. 1 Walbridge, in the CWL SW¼ NE¼ of 4-13-15. At last reports, it was drilling ahead at 2550 feet, with a slight showing of oil reported at about that depth. The Patton interests are of Wichita, Kan.

The Producers & Refiners Corp. is drilling on the Haise farm, in the NWc SE¼ of 24-12-15, a mile and a half south and four miles east of the Valerius No. 1 Oswald. This well had reached a depth of 2922 feet at last reports, and was cleaning out, after having had a good showing of oil. This well shares interest with the test of the Lewis Oil Co., two miles south and a mile east, which also had a good showing of oil and is getting ready to drill in for a test. This well, also on the Haise farm, is located in the SEc NW¼ of 31-12-14. When the writer was there, it was shut down at 2990 feet, preparing to run the 6-inch casing.

Skelly Oil Co. is down to 2860 feet, after setting the 8-inch pipe at 2806 feet, in its No. 1 Haberer, in the NWc SE¼ of 14-12-14, seven and a half miles due north of Russell, and five miles east and a mile north of the Producers & Refiners No. 1 Haise. This company also has bought an 80-acre lease comprising the E½ NE¼ of 18-12-15, a diagonal southwest offset to the Stearns-Streeter lease and a quarter-mile west of their well, but has not started operations on it as yet. This acreage, bought since the Stearns-Streeter well came in, sold for approximately $500 an acre.

Prairie Getting Busy

The latest of the big companies to start operations in Russell county is the Prairie Oil & Gas Co., which has acquired considerable acreage since the first wells came in, and which is starting two wells. This company's No. 1 Beatty, located in the SEc SW¼ NE¼ of 16-12-13, is spudding. It is seven miles north and five miles east of Russell. The other Prairie well is No. 1 Hill, in the NWc NE¼ of 13-13-14, two miles north and a mile east of Russell. The Prairie has about 3800 acres around the Beatty well and about 5400 acres in the vicinity of the Hill well.

All drilling in Russell county is being done with standard tools. The wells are quite expensive to drill, as five strings of casing have to be used, starting with 15½-inch. On the discovery well, the cost for a turnkey job was about $57,000. Contractors are getting $4.00 a foot. Wells are being drilled considerably cheaper now than in the case of the discovery, as material is more easily available, and most of the casing has been salvaged in those wells so far completed.

There are now 22 wells in various stages of development in Russell county, of which 17 are actually drilling, the remainder being rigs and one location. The deepest well in the county is Valerius No. 1 Phillips, in the SWc of 3-13-13, five miles east and three miles north of Russell. This well is drilling at 3540 feet, with the hole full of water, and is probably a failure. It will be drilled on down to the contract depth of 3600 feet and abandoned, unless oil is found in the meantime. The Valerius Co. is drilling this test on another of the many structures existing in the county. It is testing still another structure in its No. 1 Fairchild, three miles northeast of the Phillips well, in the SWc NE¼ of 36-12-13. This well is drilling at 2010 feet, having set the 10-inch casing at 1935 feet.

Water for drilling operations in most wells in the county is obtained from Saline river, which meanders in a general easterly direction through the county, passing about a mile and a half north of the Oswald field. This stream is not as salty as its name would indicate, being reasonably fresh down to the point at which Salt Creek runs into it, in 33-12-14. From there on down it is too salty to make satisfactory boiler water. Wells in the field and near it are using gas for fuel, obtained from Stearns-Streeter seven million cubic foot flow, which was saved for this purpose. Outlying wells are using fuel oil, which must be hauled to the location.

An Open Prairie Country

Russell county topography is mostly prairie, and gives the impression of a gently rolling surface, but is cut up by sudden precipitous canyons and bluffs, many of which are not apparent to the observer until they are closely approached. The Saline river winds through a narrow valley with steeply sloping sides. At a point about four miles north of Russell, the outcrop of Dakota sandstone is about 80 feet above the surface of the river, according to Raymond C. Moore.

All the wells mentioned in this article were started since the Valerius discovery well was drilled. All of them are located with careful reference to geological features, their number giving an idea as to the number of structures that have been found in the county. Whether most of these will prove productive only the drill will tell. At any rate, the county is getting a thorough test and the next few months should tell the whole story as to Russell's future importance to the oil industry.

In conclusion, let us say that if all Russell county's stone fence posts were laid end to end, it would take the farmers probably 50 years to set them up again, and they would have to abandon their wheat crop to get it done that quickly.

Crude Price Changes

July 26.—On July 26 Magnolia Petroleum Co. eliminated the 33 to 35.9 and 36 and above grades from its gravity schedule on Oklahoma, Kansas, north and north-central Texas crudes and establish the grade of 33 and above gravity, on which it posted a price of $1.25. This is a reduction of 10 cents on the 33 to 35.9 grade and 25 cents on the 36 and above grade. Crude below 33 gravity remained unchanged as follows: below 28, 90 cents; 28 to 30.9 $1.00; 31 to 32.9, $1.10.

* * *

July 28.—On July 28 Prairie Oil & Gas Co. reduced all grades of Mid-Continent and north Texas crudes from 15 to 25 cents. Below 30 gravity was reduced 15 cents to $1.10; 30 to 32.9 reduced 20 cents to $1.25; 33 and above reduced 25 cents to $1.50. Gulf Production Co. and Texas Co. immediately met Prairie's reduction.

* * *

July 28.—On July 28 Humble Oil & Refining Co. abolished the 39 and above grade in north and central Texas and posted $1.60 per barrel on crude testing 36 and above gravity. This is a reduction of 15 cents on 39 and above gravity.

* * *

July 29.—Ohio Oil Co. on July 29 reduced Wyoming and Montana grades it buys 15 cents and Midwest Refining Co. reduced prices 25 cents. New Salt Creek price $1.10.

Oil Attorney Commits Suicide

TULSA, July 29.—Benjamin F. Rice, well-known attorney who has represented oil companies of the southwest for many years, committed suicide the night of July 27. He shot himself at the grave of his father in Oaklawn cemetery.

Until recently Mr. Rice was connected with the Pierce Oil Corp. He formerly represented the Charles Page interests, the Roxana Petroleum Co. and many other oil companies.

OKMULGEE, July 29.—Charles Hewitt, widely-known scout, covering this district for the Cosden Oil & Gas Co., has gone to Bradford, Pa., his old home town, to spend a two-weeks' vacation.

THIS WEEK'S OIL NEWS SUMMARIZED

Crude Production By District

Oklahoma

	July 26	July 19
Bristow	49,550	49,600
Burbank	82,685	85,500
Cushing	23,510	23,225
Cromwell	47,650	42,550
Healdton	16,115	16,200
Hewitt	21,540	21,600
Osage, except Burbank	50,710	50,980
Stroud	16,810	18,290
Tonkawa	38,130	37,000
Wewoka	6,890	7,600
Other fields	130,200	130,550
Total	483,790	483,095
Increase	695	

Kansas

Augusta Douglas	3,800	3,770
Blankenship district	3,100	3,040
Elbing Peabody	8,000	8,000
El Dorado	16,225	16,000
Fox Bush	3,920	3,935
Greenwood county	23,750	23,200
Other fields	21,220	19,100
Total	80,015	77,045
Increase	2,970	

North Louisiana and Arkansas

	July 24	July 17
Caddo, light	10,250	10,542
Caddo, heavy	1,900	1,960
DeSoto-Red River	5,795	5,612
Cotton Valley	10,200	4,210
Haynesville	18,789	18,530
Homer	7,720	7,697
Bellevue	4,890	5,300
Spring Hill	200	200
El Dorado	12,500	12,610
Smackover, light	37,125	38,650
Smackover, heavy	93,965	95,550
Stephens	2,100	2,200
Total	205,534	203,061
Increase	2,473	

Marketing

Prices of gasoline in the refinery markets have been steadier in the last week than for more than a month. Some refiners of the Mid-Continent were inclined to advance their prices late last week. The reduction in prices of Mid-Continent crude oil Monday slowed down trading but refiners were firm in upholding gasoline prices. Whether they will be able to maintain their price structure remains to be seen.

While kerosene has been less active in the Mid-Continent, demand in the eastern refining district has been good and stocks are low. Fuel oil has been a little easier in the southwest

Pennsylvania cylinder stocks are in good demand but in Oklahoma only bright stocks can be described as active. Paraffin wax is stronger.

Production

The estimated gain in production for the entire country during the week ended July 26 was 4800 barrels over the preceding week's daily average. Oklahoma practically stood still while Kansas gained nearly 3000 barrels due to completion of a large well in Cowley county in new territory. Louisiana and Arkansas accounted for the rest of the increase while other districts either lost slightly or showed no material change. Further reductions in price during the week, affecting the Mid-Continent and the Louisiana-Arkansas district, tended to further curb new drilling.

Crude Production By Districts

California

	July 26	July 19
Long Beach	154,000	158,000
Santa Fe Springs	59,800	59,000
Torrance	57,500	56,000
Huntington Beach	44,000	45,000
Dominguez	17,250	13,250
Rest of State	289,700	291,700
Total	622,250	622,950
Decrease	700	

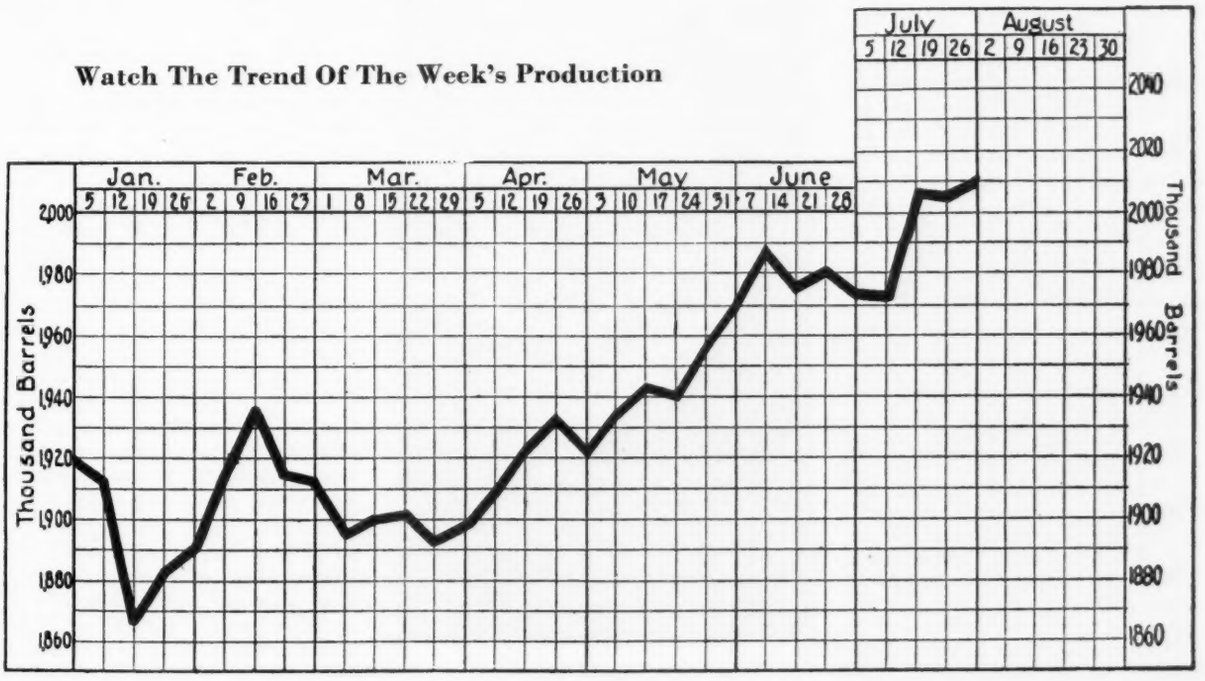
Texas and Coastal Louisiana

	July 26	July 19
Mexia Currie Richland	44,345	46,180
Corsicana Powell	83,500	86,000
Wichita Falls district	76,385	75,815
Ranger Lime	32,705	34,250
Ranger Sand, West Texas and Panhandle	14,420	13,090
San Antonio Luling Mirando	50,615	51,100
Coastal Texas	76,070	72,710
Coastal Louisiana	7,745	7,255
Total	385,785	386,400
Decrease	615	
Rocky Mountain	131,000	130,525
All Eastern	103,500	104,000
Total U. S.	**2,011,874**	**2,007,061**
Increase	**4,813**	

Gasoline Export Prices Cut

NEW YORK, July 29.—Standard Oil Co. of New Jersey July 29 reduced the export price of U. S. motor gasoline ¾ cent per gallon, export naptha 1 cent and 63-66 and 66-68 grades of gasoline 1½ cents per gallon. Cased gasoline also was reduced ¾ cent per gallon.

Watch The Trend Of The Week's Production



Western Michigan Jobbers Meet At St. Joseph Club

By Special Correspondent

ST. JOSEPH, MICH., July 26

MORE than 100 persons registered at the meeting of Michigan oil men here on July 23 and three-fourths of them were bona-fide jobbers of the Wolverine state. And every man who registered was out early, dressed and breakfasted and ready for the meeting when President H. H. Ragle smote the table with the gavel. This 100 per cent punctuality was brought about by the resourcefulness of Michigan's field secretary, James A. Gilmore. Here is how it happened:

A club of young lady athletes in St. Joseph were holding their annual water carnival that Wednesday morning at 9 o'clock at the Edgewater club, lasting about an hour. The jobbers' meeting was in the ball room of the same club, overlooking the lake. After Dr. L. A. King, mayor of St. Joseph, had passed out prizes to the contest winners and all the bowing and shouting was over, it was 10 o'clock and Mr. Ragle called the meeting to order. And the membership was there to the last man.

All the delegates who attended the meeting were housed at the club, so the meeting was a success as a general social get-together as well as from a business standpoint. There were four good talks during the one-day meeting, which after all was not a general state meeting but a regional gathering for the oil men in the western part of the state. J. J. Theisen of the Sieber Oil Co., St. Joseph, was host at one of the best entertainments the Michigan men ever participated in, at any convention. It took place on the night after the convention.

Colonel Sidney D. Waldon of Detroit, who has become nationally known as the man who led the fight in Michigan against a gasoline tax and won it, made one of the headline addresses. He presented a long list of reasons why a tax on gasoline is considered inequitable as a means for the state to raise money. The oil men in Michigan have long been squarely behind him on this point and they re-affirmed their opposition to a gasoline tax by resolving against it.

A. D. Dubuisson, an oil jobber of South Haven, Mich., popular enough in his home town to get elected mayor some six months ago, read a carefully prepared paper on "Delivery Costs." The treatise covered both tank wagon and service station deliveries. The figures were based on his experiences and the records of his own company, of course.

E. E. Grant of Chicago addressed the Michiganders on the subject of "Marginal Contracts." Mr. Grant's admonition to the jobbers was briefly "Live up to your marginal contract just as faithfully as you expect your refiner to live up to it, or you will gradually destroy the Independent refiner and be without a source of supply."

Charles W. Whitehair, representing Whitehair Bros., Cleveland, O., talked to the gathering about insurance of practically every sort that is of special service to oil men as such. He touched on fire, compensation, and liability for wrong delivery.

In the evening, every one who had registered was guest of the Sieber Oil Co., for dinner at the club. After dinner there was an entertainment of music and dancing by local talent. The party closed with a five-round boxing bout between two 12-year old colored boys.

H. H. Ragle, head of the Federal Petroleum Co., Jackson, Mich., now in the middle of his second term as president of the Michigan jobbers, presided at this gathering. Details of the meeting were handled by Secretary Gilmore, with the help of Mr. Theisen who had the advantage of being at home and knowing all the ground rules. It was announced during this meeting that the membership of the Michigan association has increased nearly 100 per cent since last March when Mr. Gilmore took up his official duties. The aim is to double it again before the next annual meeting in January, 1925.

William E. Wall

Wall And Steigerwald New Oil Firm

CLEVELAND, July 28.—Two veterans of the oil industry have gone into business as a partnership for the marketing of petroleum and its products under the firm name of Wall & Steigerwald, Inc. The members of the firm are W. E. Wall, formerly for years president of the Fred G. Clark Co. of Cleveland and for many years president of the National Petroleum Association, and G. J. Steigerwald, also for years with the Fred G. Clark Co.

In the re-organization which has been going on in the Clark company for several years, they have retired. Mr. Wall left nearly a year ago and Mr. Steigerwald leaves Aug. 1.

The firm will deal in all petroleum products, including gasoline, and from all fields but will specialize on Pennsylvania goods. Their offices will be at 1614 Union Trust building, Cleveland, O.

The two are among the best known men in the oil industry. Mr. Wall, up to his retirement, was for 35 years with the Fred G. Clark Co. and for some 30 years of that time was general manager and president. Prior to the death of the founder of the business, Fred G. Clark, in 1899, Mr. Wall was his chief assistant. During his administration the company grew from a small organization to a very large one.

Mr. Wall, was also the first president of the National Petroleum Association as it is at present organized. He and other eastern refiners brought about its organization 20 years ago. The early days of the association were devoted largely to fighting the battles of the Independent oil industry, not only of the immediate members who were the refiners in western Pennsylvania, but for the Independent refiner and Independent jobber all over the the country. Mr. Wall was active in the association's affairs as its president for 12 years. These were turbulent years and years in which some of the greatest history of the Independent oil business was written.

Mr. Steigerwald, better known as "Gus", started in the oil business 33 years ago as an office boy in the old firm of Scofield, Shurmer & Teagle, the Teagle being John Teagle, father of Walter C. Teagle now president of the Standard Oil Co. of New Jersey.

Steigerwald got his early training for nearly 10 years under John Teagle. When the concern sold out to the Republic Oil Co., Steigerwald went with them and was assistant to Walter Teagle, who was the first and only president of the Republic. He was the operating head of the Republic which was a Standard Oil dummy subsidiary.

In 1904 Steigerwald went with the Fred G. Clark Co. For years he traveled among the jobbing trade until he was one of the best known salesmen, especially on lubricating oils. There wasn't a jobber anywhere in the country dealing in lubricating oils of any quantity that Gus hasn't called on.

Analysis Of Certain Predictions Which Were Made In 1923

By Thomas M. Galey,
Independent Producer, Independence, Kans.

PERHAPS the most constructive and clearly visioned suggestion of 1923 was made by A. C. Bedford at the Drake Day Celebration in Titusville on August 27. The recent action of several of the big purchasing companies closely conforms to that suggestion. Mr. Bedford said:

"It so happens that most of the fields furnishing flush production are producing unusually light gravity crude. If the differentials based on gravity were adjusted in line with the present value of the gasoline content in the crude, the reduction would affect principally the owners of flush production who, with their lower cost and greater production are best able to bear the burden which would fall to a much less extent on the owners of small wells. When these differentials were established gasoline prices were substantially higher than at present and the scale of prices for the various gravities was presumably drawn up on that basis. It would naturally follow, as a sequence of such adjustment, that when prices of gasoline increased the value of the higher gravities would be correspondingly increased."

It is surprising that the flexibility and splendid regulation possibilities in the gravity system of purchase have not heretofore been used to more advantage. Some unexpected snags may develop but at present it looks like the longest step forward that has been made in years.

Mr. Bedford further stated that the extent of the problem of enormous storage for either crude or gasoline must rest upon the results of such expedients as the reduction in price of certain grades of crude, the pro-rating of runs and other steps designed to curtail production but he admitted that the outcome could only be approximately foretold.

Last November the Standard Oil Co. of N. J. published some predictions in "The Lamp" which have matured quite accurately. It stated that stocks would accumulate until June 1924 at which time there would be 525,000,000 barrels on hand. The guess was well made for there are well over 500,000,000 barrels. However, it anticipated a draft on stocks of 100,000 barrels per day beginning in June and suggested this would mean a healthy condition except for the enormous accumulation of stocks. This draft on stocks has apparently failed to materialize up to August 1. This possibility was anticipated by the following: "However, if the demand of the refiners for crude resulted in a higher level of prices, (which it did), and a consequent stimulation of drilling activities, (which it did), the improvement in the general situation would be further delayed, (which it is).

Mr. Doheny recently stated that the big stocks of crude were a blessing to the country and a stabilizer of the industry, but apparently the population who believe in the economics of Governors Bryan and McMaster, are unwilling to pay their share of the annual charge for interest and loss thereon which amounts to about $175,000,000. About 2.6 cents per gallon.

On October 4, 1923, Joseph Jensen of the Amalgamated Oil Co. in California, wrote: "There will be no surplus production during the latter half of 1924". He referred to the production of the whole country. Perhaps the tide will turn with its customary suddenness.

It was on August 9, 1923 that W. H. Gray predicted a steady drop of 38,000 bbls. per week for nine weeks. This would pull the great peak of 2,320,514 barrels on July 14 down to 1,978,514. This proved to be an accurate estimate but Mr. Gray was unwilling to guess further ahead than nine weeks because of the great unknown quantity, new production.

National Petroleum News has just republished, in book form, the five articles on Accounting for Service Stations and Bulk Stations which ran in its news columns last winter, and occasioned so much call for extra copies that this edition was quickly exhausted.

The articles were prepared by a man with oil marketing experience, who had worked out the system as used by one large middle west company. Forms and methods necessary to check service station sales and all business handled at bulk stations were given; also the incorporation of these into the usual double-entry bookkeeping system the home office would use.

Model forms to be filled out at service and bulk stations are given. The need for the company employe to faithfully follow the details of filling out forms and accurately checking stocks, for his own protection and future advancement, is brought out.

Price of this book is 50 cents. Orders should be sent to National Petroleum News, 812 Huron Road, Cleveland, attention Editorial Department.

Commission Recants Texas Co. Charge

WASHINGTON, July 28.—The Federal Trade Commission today gave out the following statement regarding alleged identity of certain stockholders of The Texas Co., and various so-called Standard Oil companies:

"The Texas Co., in its own journal, the Texaco Star, issue of May, 1924, charges that a report of the Federal Trade Commission, entitled "Price of Gasoline in 1915," published April 11, 1917, contained a statement that was misleading, namely, that stockholders of so-called Standard Oil companies owned some 20 to 25 per cent of the shares of stock of The Texas Co.

"This complaint having come to the attention of the present members of this commission, an inquiry has been made into the matter. It appears that various oil companies, including The Texas Co., and several Standard companies, themselves furnished lists of their stockholders, at the request of the commission, and that a comparison of these lists of names showed that Texas Co. stock so reported was held in the proportion stated by persons who were similarly reported by Standard companies as holders of their stock. In other words, the statement complained of was accurate, according to the reports made by the companies.

It appears to the present members of this commission, however, that due consideration was not given to the fact that, where the stockholders so reported were bankers or brokers, as was the case in a number of easily recognizable instances, such stock would be often, if not generally, held by such bankers or brokers in name only and for the benefit of their clients investing in or speculating in such stock.

"On the other hand, as to the alleged misleading tendency of the statement, namely, that it would suggest that the Standard interests controlled the Texas Co., it should be noted that the said report expressly classed and designated The Texas Co. as "Independent."

City Specifies Gasoline Initial

LONG BEACH, CAL., July 24.—This city has just put into operation an ordinance fixing gasoline specifications, which is quite similar to that in effect in Los Angeles.

The Long Beach specification permits of an initial point of 100 to 130 instead of 140, as is the case in Los Angeles. According to the ordinance, gasoline is the only petroleum fuel which can be delivered to a customer through a pump. The director of public safety is charged with enforcement of the new regulation.

AUGUSTA, KAN., July 28.—Charles C. Durkee who has been refinery superintendent at Fort Worth for the White Eagle Oil & Refining Co., will be transferred Aug. 1 to Augusta, Kan., to be superintendent of the company's refinery at that place. Mr. Durkee is an associate member of the A. S. M. E.

Governors Appointed For Second Annual Petroleum Congress

Staff Special
TULSA, July 26.

APPOINTMENT of the board of governors for the second annual International Petroleum Congress was announced today by L. B. Jackson, president. The congress will be held this year on Oct. 6, 7 and 8 in connection with the International Petroleum Exposition.

Prominent oil men from every field have been included in the list of governors. The group will aid in the preparation of a program for the congress and direct its sessions. The list follows:

F. G. Allen, president, South Dakota Independent Oil Jobbers Assn.
Ray Andrew, president, Wisconsin Independent Oil Jobbers Assn.
Herbert Barringer, president, Institute of Petroleum Technologists, London, England.
Leod D. Becker, editor, Fuel Oil.
Ben M. Bell, president, National Oil Scouts Assn.
Howard Bennette, managing director, Western Petroleum Refiners' Assn.
R. D. Benson, Tidewater Oil Co.
Prof. J. S. S. Brame, F. I. C., F. C. S., Institute of Technologists, London, England.
E. C. Breene, president, Pennsylvania Grade Crude Oil Assn.
B. B. Brooks, president, Rocky Mountain Oil & Gas Assn.
D. E. Buchanan, president, Association Natural Gasoline Manufacturers.
A. J. Callaghan, president, American Oil Men's Assn.
J. A. Chapman, McMann Oil Co.
Thomas Chestnut, Chestnut & Smith Corp.
H. E. Clark, president, Northwestern Independent Oil Assn.
Lester B. Colby, editor, Oil & Gas News.
J. D. Collett, president, Texas-Louisiana division, Mid-Continent Oil & Gas Assn.
Burt H. Collins, Echo Oil Co., Tulsa.
Dave F. Connolly, Texas Co.
John B. Corrin, president, Natural Gas Assn. of America.
L. L. Coryell, president, Nebraska Independent Oil Men's Assn.
J. S. Cosden, Cosden & Co.
S. S. Cramer, Wisconsin Independent Oil Jobbers Assn.
James K. Crawford, Brothers Oil Co.
R. A. Crawford, Lone Star Gas Co.
J. E. Crosbie, Tulsa.
Frank Cullinan, Republic Producing Co.
R. G. Cunningham, Oklahoma Oil Jobbers Assn.
W. N. Davis, president, Mid-Continent Oil & Gas Assn.
A. L. Derby, Derby Refining Co.
Henry L. Doherty, Cities Service Co.
T. J. Donoghue, vice-president, Texas Co.
R. L. Dudley, editor, Oil Weekly and Refiner & Gasoline Mfr.
Wm. Duke, Jr., New York State Oil Producers Assn.
Robert W. Egan, vice-president and general manager, Oil & Gas Journal.
Lewis Emery, Jr., Bradford, Pa.
F. C. Enz, president, Indiana Independent Petroleum Marketers Assn.
J. H. Evans, Devonian Oil Co.
Keith J. Fanshier, editor, Oil News.
A. L. Foraker, president, Purchasing Agents Assn., of Tulsa.
H. V. Foster, Bartlesville, Okla.
N. V. V. Franchot, New York State Oil Producers Assn.
F. W. Freeborn, president, Technical Club of Oklahoma.
V. C. Fuller, Purchasing Agents Association of Tulsa.
W. H. Fuqua, Amarillo, Texas.
W. P. Gage, Humphreys Pure Oil Co.
James H. Gardner, president, American Association of Petroleum Geologists.
Henry Gault, Director de l'Institut du Petrole de France.
J. A. Germany, Panhandle Refining Co.
G. A. Gifford, president, Okmulgee district, Oil & Gas Assn.
W. H. Gray, president, National Association of Independent Oil Producers.
John S. Griffin, Tulsa, Okla.
John W. Harreld, United States senator from Oklahoma.
Frank Haskell, Tidewater Oil Co.
A. J. Hazlett, editor, Inland Oil Index, Casper, Wyo.
Wm. J. Healey, president, Northwestern Pennsylvania Oil Producers Assn.
Harry Heasley, Devonian Oil Co.
J. P. Herrick, New York State Oil Producers Assn.
A. R. Hinton, managing editor, California Oil World, Los Angeles, Cal.
W. H. Hoffman, Syracuse, N. Y.
E. B. Howard, Washington, D. C.
J. Arthur Hull, Tulsa, Okla.
Col. A. E. Humphreys, Dallas, Texas.
Arthur E. Hurley, president, Hurley Gasoline Co.
W. M. Irish, Atlantic Refining Co., Philadelphia.
L. B. Jackson, Tulsa, Okla.
H. G. James, president, Missouri Oil Men's Association.
T. C. Jones, president, Ohio Gas & Oil Men's Assn.
Geo. J. Karb, president, Ohio Petroleum Marketers Assn.
C. D. Keen, president, Independent Oil & Gas Producers Assn. of North Louisiana.
Dana H. Kelsey, Prairie Oil & Gas Co.
Frank Kell, Wichita Falls, Texas.
S. P. Kennedy, Bradford, Pa.
J. T. King, Kingwood Oil Co., Okmulgee.
W. L. Kistler, Producers & Refiners Corp.
L. F. Kuehnle, president, Iowa Independent Oil Men's Assn.
M. F. Lackey, president, Arkansas-Tennessee Oil Marketers Assn.
John Landon, Independence, Kan.
J. J. Larkin, Tulsa, Okla.
Archie W. Leonard, Oklahoma Natural Gas Co.
Edward R. List, president, Central West Oil Men's Assn.
Fred R. Low, president, American Society of Mechanical Engineers.
Col. U. G. Lyons, president, National Petroleum Assn.
J. H. Markham, Jr., Tulsa, Okla.
E. W. Marland, Marland Refining Co.
A. B. Marshall, president, Kentucky Oil Men's Association, Inc.
A. S. Matthews, president New York State Petroleum Marketers Assn.
R. R. Mathews, Chairman, American Chemical Society.
E. P. Mathewson, president, American Institute of Mining & Metallurgical Engineers.
R. F. MacArthur, Barnsdall Oil Co.
Alex A. McCurdy, editor, Oil Trade Journal.
Henry McGraw, Gypsy Oil Co.
R. W. McIlvain, Pure Oil Co.
A. C. McLaughlin, president, California Chamber of Mines & Oil.
J. Fred Miles, Swiss Oil Corp.
P. M. Miskell, Empire Refineries.
D. W. Moffitt, Cosden & Co.
Clint Moore, Tulsa, Okla.
Nelson K. Moody, president, Prairie Oil & Gas Co.
Roy B. Moore, editor, Petroleum Age.
Geo. N. Moore, president, Moore Refining Co.
J. J. Moroney, Okmulgee district, Oil & Gas Assn.
J. L. Murray, president, Illinois Petroleum Marketers Assn.
L. V. Nicholas, president, National Petroleum Marketers Assn.
Alva J. Niles, Tulsa, Okla.
Thos. A. O'Donnell, president, American Petroleum Institute.
Chas. Page, Sand Springs, Okla.
E. R. Perry, Cosden & Co.
J. Edgar Pew, Tulsa, Okla.
Frank Phillips, Bartlesville, Okla.
Waite Phillips, Tulsa, Okla.
F. A. Pielsticker, president, Western Petroleum Refiners Assn.
Warren C. Platt, president, National Petroleum News.
W. B. Pyron, Gulf Production Co.
M. L. Requa, Los Angeles.
J. Kent Ridley, editor, Filling Station.
Benjamin F. Robinson, president, West Virginia Oil Assn.
E. S. Rule, president, Kansas Oil Men's Assn.
L. P. St. Clair, Independent Oil Producers Agency.
J. K. D. Shaffer, Oklahoma City.
A. R. Simons, Tulsa.
Earl Sinclair, Sinclair Consolidated Oil Corp.
H. F. Sinclair, Sinclair Consolidated Oil Corp.
W. G. Skelly, Tulsa.
Harry H. Smith, Mid-Continent Oil & Gas Assn.
Tom Smith, Chestnut & Smith Corp.
Chas. E. Steele, president, Natural Gas & Petroleum Assn., of Canada, Chatham, Ontario.
Herbert R. Straight, president, Kansas-Oklahoma division, Mid-Continent Oil & Gas Assn.
Gen. J. Duff Stuart, president, Sweet Grass Oil, Ltd., Vancouver, B. C.
L. H. Thornton, president, New York State Oil Producers Assn.
James A. Veasey, Carter Oil Co.
A. A. Warren, president, Oklahoma Oil Jobbers Assn.
W. D. Wamsley, Minnesota Petroleum Assn., St. Paul.
W. E. Weidler, president, West Virginia Marketing Assn.
W. M. Welch, Tidal Refining Co.
H. W. Westsmith, editor, Mining & Oil Bulletin.
J. M. Wolf, president, Minnesota Petroleum Assn.
C. J. Wrightsman, Tulsa.
H. C. Wurster, Hawkeye Oil Co.
R. L. Young, president, Gulf Coast Independent Oil Producers Assn.
Lea Yount, president, Arkansas Oil & Mineral Assn.
C. A. Zimmerman, editor, Oil Age.

Tampico Contractor Tests Elstone Structure

HOUSTON, July 28.—Sam Kone, oil well contractor of Tampico, has taken over acreage blocked by "Rox" Underwood et al on the Elstone structure, in Medina county, Texas, and has made location for a well near the northeast corner of the Murphy-Fusselman 313 acres, in the center of the John Ward survey. The test is to be carried to 3300 feet if necessary.

Considerable leasing activity in Medina county, southwest of San Antonio, has been under way prior to and since announcement of the test Kone will make.

Producing Industry Operating At A Deficit For Last Two And Half Years

Staff Special

CLEVELAND, July 29

THAT the oil producing industry has been operating, the past two years and a half, at an average loss of 40 cents a barrel on each barrel of crude taken from the ground is the statement of E. W. Marland, head of the Marland Oil Co., with headquarters at Ponca City.

The statement comes, in a semi-official capacity, from Mr. Marland as a member of a general committee of oil men in all branches appointed just a year ago at a meeting in Chicago called by President Nicholas of the National Petroleum Marketers Association to consider the crisis from over-production of crude the country was facing then.

Through a coincidence the statement comes this year just when the industry is facing the same problem; not that the overproduction is as great as a year ago, but back of that is the accumulation of crude stocks much larger than a year ago because of the surplus 1923 production.

Mr. Marland was not chairman of the committee appointed at the meeting in Chicago, July 26, 1923. But the department of economics of his company started in last summer by sending out questionnaires to a large number of producing companies operating in all parts of the country. Only about 200 replies were received, but many of these were from companies operating in the producing fields in a large way, whose data would be valuable. Government reports and other unofficial statistics relating to production costs were studied and the report as issued is described as "some provisional general conclusions that are believed to be of value." The report is not issued as coming from the committee, but as an independent statement on the matter of producing costs coming from C. C. Osborn, economist with the Marland company, under the direction of Mr. Marland.

The first part of the report relates to the cost of producing crude from small wells, yielding one barrel per day or less, as found through the eastern fields and some of the earlier districts in Oklahoma and Kansas. Here the average figure arrived at of $2.16 a barrel is a straight arithmetic average based on the returns received. This cost price, it is understood, applies over the two-and-a-half year period under study.

"The maximum weighted price received for this oil during 1923 was $2 a barrel, and during a large part of that time it brought less than that figure," the report states. "The United States contains about 300,000 producing oil wells, of which 250,000 yielded an average of one barrel a day. These wells as a whole declined at the rate of only a few per cent each year. They are our cost settled source of supply. The operating cost given was calculated on the same basis as that accepted by the federal government for taxation purposes and, therefore, includes lifting expenses, depletion and depreciation of capitalized investment and general administrative costs.

"Many operators of small wells reported that their proceeds were considerably below operating expenses and that, unless prices were soon advanced they would be forced to sell their properties at a sacrifice, or abandon the wells and salvage the material."

The second part of the report is a comparison of the operating expenditures of the producing industry as a whole and the market value of oil produced. Here the 200 returns from the questionnaire were considered as representative examples of drilling costs in the various fields. By applying them to well-completion statistics from authentic sources tentative drilling expense was arrived at. Factors upon which no exact and complete data could be obtained, namely bonuses, rentals and lifting costs, were estimated upon the basis of the company's own knowledge and experience. Posted prices were applied to government production figures to obtain estimated proceeds from the sale of the oil produced.

Deficit of 40 Cents

The conclusion of this part of the report, which is brief and largely tabular in nature, is that for the period under observation the producing industry suffered a deficit averaging 40 cents a barrel for each barrel of oil taken from the ground, taking into account increased value of producing properties arising from stimulated development

Cost of Drilling Wells by States, as Compared with Gross Market Value of All Oil Produced

(From Report Compiled for E. W. Marland)

State	Schedule A Cost of Drilling Wells: No. of Oil Wells and Dry Holes Drilled	Average Cost	Total Cost	Schedule B Gross Market Value of *All Oil Produced: Value of Oil Produced before Royalties
1921				
California	956	$69,766	$ 66,696,296	$203,138,000
Oklahoma	5,715	29,907	170,918,505	183,185,000
Texas	3,111	28,429	91,553,619	162,663,000
Kansas	1,378	24,979	34,421,062	68,694,000
Arkansas and Louisiana	1,247	26,319	32,819,793	55,215,000
Ohio	1,310	8,000	10,480,000	21,512,000
Wyoming and Montana	505	30,000	15,150,000	25,901,000
Pennsylvania	1,627	8,000	13,016,000	24,746,000
West Virginia	500	16,000	8,000,000	26,482,000
Kentucky	2,474	6,000	14,844,000	16,736,000
Tennessee	31	6,000	186,000	21,000
Indiana and Illinois	583	16,000	4,664,000	23,046,000
	19,437		$462,749,275	$811,339,000
1922				
California	1,089	$87,153	$ 94,909,900	124,062,000
Oklahoma	6,140	29,902	183,598,280	249,263,000
Texas	4,529	25,044	113,424,276	188,149,000
Kansas	1,638	23,435	38,386,530	48,402,000
Arkansas and Louisiana	1,852	24,356	45,107,312	67,492,000
Ohio	1,427	8,000	11,416,000	13,915,000
Wyoming and Montana	402	30,000	12,060,000	31,318,000
Pennsylvania	2,374	8,000	18,922,000	24,921,000
West Virginia	500	16,000	8,000,000	21,979,000
Kentucky	2,263	5,000	11,315,000	28,510,000
Tennessee	32	6,000	192,000	22,000
Indiana and Illinois	572	16,000	4,576,000	86,251,000
	22,818		$541,977,298	884,284,000
1923 (First 6 Months)				
California	574	$99,198	$ 56,939,000	72,781,000
Oklahoma	3,465	32,092	111,198,780	157,080,000
Texas	2,846	24,810	70,609,260	86,941,000
Kansas	927	21,310	19,754,370	24,692,000
Arkansas and Louisiana	1,130	20,398	23,049,740	40,449,000
Ohio	1,033	8,000	8,264,000	7,498,000
Wyoming and Montana	234	30,000	7,020,000	28,156,000
Pennsylvania	1,266	8,000	10,128,000	13,315,000
West Virginia	547	15,000	8,205,000	11,484,000
Illinois				
Kentucky	1,085	5,000	5,425,000	14,755,000
Tennessee	18	6,000	108,000	17,000
Indiana	322	16,000	2,576,000	10,509,000
	13,447		$323,277,150	$467,677,000

SUMMARY OF ALL FIELDS

Cost of Drilling Well

Year	Total Costs
1921	$ 462,749,275
1922	541,977,298
1923 (6 months)	323,277,150
	$1,328,003,723

SUMMARY OF ALL STATES

Market Value of *All Oil Produced

Year	Total Costs
1921	$ 811,339,000
1922	884,284,000
1923 (6 months)	467,677,000
Total Revenue	$2,163,300,000
Less Royalty	270,412,500
	$1,892,887,500

*Note this is all oil produced in these states, not just oil from newly drilled wells.

work in the two years and a half under consideration.

Probably no other competent analysis of these operating costs and revenues would arrive at exactly this same figure. However, it is doubtful if any other compilation would show anything but a loss for the industry for the last two years or better, on the schedule of prices it has received for its oil. This is the important fact and one that cannot help but have an effect on the operations of the producing industry. A difference of a few cents one way or another from the average loss of 40 cents a barrel arrived at by the Marland economists is not of particular importance.

This is not the first time that Mr. Marland has publicly stated his opinion that the producing branch of the industry was operating at a loss. His study of the situation dates further back than the starting of this report under consideration and its conclusions should be seriously considered by the industry as a whole.

The fact that crude price schedules the past two or three years have meant a loss on operation on settled production has had its effect in the great reluctance of operators to hold back on their operations in the new flush fields where new wells have large initial production, since it is largely these districts that offer chances of financial success. If a well is large enough an operator is going to make money on it almost regardless of the price per barrel he gets for his oil.

It is quite likely that this tendency of operators to pass over the settled districts to expend their efforts in the new flush fields is being recognized in the present price adjustments being made in the Mid-Continent district, where heaviest price reductions are being made in the high gravity crude, such as is generally experienced in the new pools, and smaller reductions are being made in the heavier gravity crudes, which come from the older districts.

Must Keep Old Wells

It has often been said that these 250,000 or so old wells are the backbone of the nation's oil supply and they must be saved against future consumptive needs. Of more direct interest than these also is the fact that the large producing and pipe line interests have tremendous investments in these settled fields and it would seem like good economics for them and the country at large to allow the development of these territories to remove every available barrel of crude, rather than see them dropped in the search for entirely new pastures.

Much of the report is in the form of two tables, one showing the cost of drilling wells by states during 1921, 1922, and the first six months of 1923, and the other showing for the same states, during the same periods, the market value of all the oil produced—from old well as well as the newly drilled wells. These two tables have been grouped as they appear here and an interesting study is provided in certain states by comparing the cost of drilling new wells with the total value of all oil produced in those states.

Comparative Costs and Revenues
January 1, 1921—June 30, 1923

Cost of drilling			$1,328,003,723
Cost of lifting 1,360,851,000 barrels @ 50c per barrel (estimated)			680,425,500
Bonuses			
Burbank, Osage County, Oklahoma		$ 43,000,000	
All other leases 31,000,000 A. @ $10 (estimated)		310,000,000	353,000,000
Rentals (estimated) 1921	198,000,000 A. @ $1.00	$198,000,000	
1922	207,000,000 A. @ $1.00	207,000,000	
1923	210,000,000 A. @ $1.00	210,000,000	615,000,000
Total costs			$2,976,429,223
Total value of oil less royalties			1,892,887,500
Deficit to producer			$1,083,541,723

The plight of the Oklahoma producer, for example, is particularly apparent. With the deduction of eighth royalties the total value of all oil produced there for 1921 and 1922 was not a great deal above the cost of merely drilling new wells. In the eastern fields, in Ohio for example, the total value of crude produced in the first half of 1923 was less than the cost of drilling new wells.

Reports on Total Costs

Regarding this compilation of total operating costs with revenue from oil produced, which assumes that all oil produced was sold by the producer and not held in storage by him, the report states:

"During the period beginning Jan. 1, 1921, and ending June 30, 1923, the oil industry expended not less than $2,976,000,000 for drilling, lifting, bonuses and rentals. Dividing this figure by 1,360,851,000 barrels, the amount of oil produced during this period, gives $2.17 per barrel of production, based on this comparison. The market value of the oil produced, after subtracting royalties, was $1,892,000,000, which, divided by the number of barrels of oil produced, gives $1.36 per barrel as the average market value. There remained a deficiency of $1,083,000,000, or about 80 cents for each barrel of oil sold. This deficit does not take into consideration money paid out by legitimate companies for interest, geological exploration, taxes and general administration, and does not, of course, take into consideration cash put by the public into grossly inflated production schemes and so-called syndicates. During this period the oil industry experienced the greatest production in its history.

"Average daily gross production on Jan. 1, 1921, was 1,256,000 barrels, and on June 30, 1923, 2,210,000 barrels. Attention is called to the fact that in the deficit referred to consideration was not given to the increased market value of the producing properties as of June 30, 1923, compared with January 1, 1921. It was possible, due to the numerous factors entering into the value of oil wells over this period, to arrive at a satisfactory figure. It is the custom in the producing branch of the oil business to place a higher value upon settled production than upon flush output. This value is often stated in terms of dollars per barrel of daily production. During 1923 the proportion of flush production in comparison with the total yield of the United States was very high. If a major field be considered one which reaches a maximum production of 100,000 barrels a day before it starts to decline, then eight major pools reached their peaks in 1923, compared with 18 during the entire history of the industry. Two of the eight fields reached peaks exceeding 300,000 barrels a day and one 250,000 barrels a day. No other field in the history of the oil industry, except Cushing, which reached a peak in excess of 30,000 barrels a day in 1915, ever produced more than 150,000 barrels a day.

"As the proportion of flush production compared wtih the settled production increases, the market value of the producing properties per barrel of production declines. After very careful consideration of the increased value of producing properties at the end of the period as against that at the beginning, we have concluded such increase would not exceed in amount one-half the deficit named, leaving an actual loss to the industry of more than one-half billion dollars, or about 40 cents per barrel, over the period studied.

"Much detail work was done in arriving at the drilling costs cited. States were taken up county by county or pool by pool, and the number of wells drilled was multiplied by the average costs given in the questionnaires, or estimated costs where specified representative information was not available. It is recognized that the drilling costs given may be a little too high for some states, but it is equally true that they are probably too low for others and that the errors are, therefore, compensating. For the states where most of the money was expended in drilling in recent years, notably California, Oklahoma, and Texas, numerous returns were available, and it is believed exact drilling costs are shown in the table.

Fifty-Cent Lifting Cost

"Fifty cents a barrel, estimated on the basis of experience and research as the average lifting cost, was applied to the statistics of production reported by the United States Geological Survey. Burbank bonuses were taken from the reports of the Interior Department. Ten dollars per acre was estimated as the average bonus rate throughout the general oil regions. I believe this is conservative. The average bonus paid by the producers that sent in returns was $13 an acre.

One of the 4-cylinder 2 to 3 ton Autocars owned by the Jenney Gasoline Company, of Boston, who have a fleet of 18 Autocars.

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Cowley County Pool Now Holds Big Interest

By Special Correspondent

WINFIELD, KAN., July 26.—Rainbow Bend is the name of the district which has the earmarks now of becoming one of the greatest oil fields of Kansas. It is here that the Arkansas river, sweeping down from Colorado, breaks around the end of a great structure, to invade the lower lands lying to the southwest, thus giving rise to the romantically named bend. The pool is in southwest Cowley county.

While the surface formations here belong to the Permian time, the rich oil stratum that gives rise to the field lies in the lower Pennsylvanian rocks. In the Alcorn Oil Co.'s Graham well, two miles from the discovery well the Mississippian lime has produced a very promising well but 300 feet deeper in what is believed to be the Wilcox sand.

The discovery well of this field was drilled in the Nw of the SE of 20-33-3E, nine miles southwest of Winfield as the crow flies. It was put down by that successful independent wildcatter, Waite Phillips. Alcorn Oil Co. and Independent Oil & Gas Co. later acquired a quarter interest each in a large block of acreage which Phillips held.

This discovery well was on the Johnson farm and the sensation of the field to date is the No. 3 Johnson in the same quarter section. It proved to be what oil men call a "bear cat." On Monday, July 21, it began flowing at the rate of 190 barrels an hour and during the first 24 hours of its life delivered 2700 barrels. It is more than twice as large as the best well hitherto found in the field.

As there is little gas, the wells are not gushers usually, but are the kind that sustain their production and promise a long-lived field. The oil is high gravity—39 degrees and better—and is free from water. None of the eight wells thus far completed in Rainbow Bend pool has failed to deliver a free flow of around 500 barrels daily maximum.

The first well produced 385 barrels the first 24 hours and is still flowing not far from 300 barrels daily. The later wells have been drilled uniformly from 27 to 29 feet into the sand. This makes their production directly comparable so far as thickness of sand is concerned. They vary in total depth from 3216 to about 3240 feet.

The new Marland pipe line from the field to Ponca City has been completed and began moving oil Wednesday, July 16. It is a 6-inch line from the field to the Oklahoma state line, thence to Ponca City it is 8-inch. Its capacity with present pumping equipment is around 10,000 barrels daily.

For the 24-hour period ended July 19, the six wells then producing, put into the line 3885 barrels. This amount has been swelled to approximately 7500 barrels.

The present status of Rainbow Bend, its careful development, apparently good surrounding conditions and its possibilities for deeper producing levels, indicate that it is a pool of real importance in the making.

June Exports Of Refined Products Show Gain

WASHINGTON, July 29.—Although June exports of crude decreased 231,272 barrels, or 13.2 per cent below May, and exports of all refined products gained 18,178,138 gallons, or 5.3 per cent over May, considerable increases are revealed in shipments of all refined products, as well as crude, for the year ending June, 1924 as compared with the year ending June, 1923, according to statistics compiled by the Department of Commerce.

Largest gains in export shipments during the 12 months ended June, 1924, were made on gasoline, exports of which increased over 50 per cent over the 12 months ended June, 1923, and on gas and fuel oils, which increased over 45 per cent as compared with the year ended June, 1923. During June of this year, exports of gasoline, kerosene, gas and fuel oils increased, while lubricating oil, crude and wax shipments fell off.

Export shipments of crude in June amounted to 1,517,340 barrels, which is a decrease of 817,695 barrels, or 35.1 per cent below June, 1923. For the 12 months ended June, 1924, crude exports totaled 18,680,820 barrels, which is a gain of 5,524,475 barrels, or 41.9 per cent over the 12 months ended June, 1923. Value in June of this year was $1.62, per barrel as compared with $1.52 a year ago, and for the 12 months ended June, average value was $1.41 as compared with $1.54 during the 12 months ended June, 1923.

Exports of all refined products in June amounted to 360,173,502 gallons, which is an increase of 990,616,501 gallons, or 33.6 per cent over June, 1923. Shipments in the 12 months ended June of this year totaled 3,643,516,248 gallons, or an increase of 823,054,742 gallons, or 29 per cent over the year ended June, 1923. Value fluctuated within narrow limits, it being 10.8 cents in June of the current year, as compared with 11 cents in May, 10.8 cents in June, 1923, 9.8 cents in the 12 months ended June of the current year, and 11.5 cents in the 12 months ended June, 1923.

June gasoline and naptha exports increased 16,910,953 gallons, or 17.8 per cent over May, and increased 40,836,572 gallons, or 57.5 per cent over June, 1923. For the 12 months ended June, 1924, exports of gasoline amounted to 1,031,610,456 gallons, showing a gain of 356,893,730 gallons, or 52.8 per cent over the year ended June, 1923. Value in June of the current year decreased a half cent from 16.5 cents in May to 16 cents in June. In June, 1923, value was about 17.8 cents, and in the year ended June, 1924, it was 14.6 cents as compared with 19.8 cents in the year ended June, 1923.

Kerosene shipments, which fell off almost 9,000,000 gallons in May as compared to April, showed an increase of 2,221,603 gallons, or 2.8 per cent in June over May, and an increase of 17,337,641 gallons, or 27 per cent over June, 1923. For the 12 months ended June, 1924, 882,602,874 gallons of kerosene were exported, which shows a gain of 28,039,263 gallons, or 3.2 per cent over a similar period ended June, 1923. There has been no great change in value, it being 10.2 cents in June, 10.1 cents in May 9.6 cents in June, 1923, 9.1 cents in the 12 months ended June 1924, and 9.5 cents in the 12 months ended June, 1923.

Exports of gas and fuel oils in June gained 12,398,371 gallons, or 10.2 per cent over May, and 37,550,048 gallons, or 39 per cent, over June, 1923. In the 12 months ended June, 1924, exports totaled 1,361,122,655 gallons, showing an increase of 423,878,770 gallons, or 45.2 per cent over the 12 months ended June, 1923. Value in June was 3.5 cents as compared with 3.3 cents in May, and 2.8 cents in June, 1923. Value in the 12 months ended June this year was 3.5 cents and in the similar period ended June, 1923, was 3.1 cents.

Lubricating oil exports, which increased over 12,000,000 gallons in May over April, decreased 13,352,789 gallons, or 28.6 per cent in June over May, and decreased 5,107,760 gallons, or 13.5 per cent over June, 1923.

Exports of paraffin wax, which showed losses of over 2,500,000 pounds in May over April, declined again in June 4,534,424 pounds, or 13.3 per cent over May, but increased 7,085,874 pounds, or 31.9 per cents over June a year ago.

June exports of refined products were:

	Gallons	Value
Gasoline and Naptha	111,734,237	$17,947,380
Kerosene	81,476,093	8,315,901
Gas and Fuel Oils	133,706,470	4,763,819
Lubricating Oils	33,256,702	8,175,622
Paraffin wax (lbs.)	29,259,178	1,533,057

Teaches Necessity For Accurate Auditing

The part that service and bulk station employes play in the bookkeeping and auditing system of an oil marketing company is emphasized in Service and Bulk Station Accounting, a book just published by National Petroleum News.

This book republishes a series of five articles carried in N. P. N. last winter, prepared by an experienced oil company executive in auditing and accounting, in which details of these duties for agents were explained and model forms given for keeping track of the various transactions at stations of each type.

Price of this book is 50 cents. Orders can be secured by writing National Petroleum News, 812 Huron Road, Cleveland, attention Editorial Department.

Isn't There A Simple Cure For Motor Lubrication Troubles?

By Paul Truesdell

STAFF REPRESENTATIVE

CLEVELAND, July 28

ONE of the most vexing problems facing automobile designers and manufacturers today is how to prevent undue wear of their engines in the hands of the public due to improper lubrication.

One of the chief purposes of life of the oil companies is to sell oil for the lubrication of these engines. And to sell more oil.

Leaders in both the oil and automobile industries are agreed in general that the simplest and surest way to cure lubricating troubles is to change the oil in the crankcase at least every 500 miles in the summer and considerably oftener, for some cars at least, in the winter.

Therefore, it appears that the two industries have a point of common interest on which they could work together effectively. That is, the education of the public to this gospel of changing the oil in the crankcase every 500 miles. Such an understanding by the ordinary motorist of the need of keeping not only oil, but oil of the proper viscosity for his particular engine in the crankcase, would be of three-fold benefit: To the automobile manufacturers by eliminating a great part of the complaints that they now receive on the unsatisfactory performance of their cars; to the oil industry by enabling it to sell more motor oil; to the motorist by cutting down his repair bills and increasing his motoring satisfaction.

Oil Companies Preach Gospel

Many of the oil companies have done a good deal of work and spent a good deal of money in spreading the gospel of frequent changing of oil by urging it upon the automobile owner through billboard, newspaper and direct mail advertising. Some of them have profited largely from their efforts, notably the Corn Belt Oil Co. of Bloomington, Ill., which increased its motor oil sales some 300 per cent in a year by such an active campaign of education.

But the automobile companies, which if not first in volume of advertising space bought, certainly rank among the first two or three industries of the country as national advertisers, have for the most part devoted no attention whatever to getting into the motorist's mind the fact that however fine an engine he may have and however fine an oil he may use, he cannot get satisfactory operation from the engine unless he keeps the oil good.

In fact, it appears that some automobile manufacturers have rather leaned the other way, giving the motorist to understand that he could use the same oil for 1000 or even 1500 miles without changing it, and still get satisfactory service. One of the most prominent automobile companies recently had a big sign up over its factory in Detroit, reading "Change your oil every 1200 miles."

Lubrication engineers of the oil industry and even some of those in the automobile industry admit frankly that the engine designers have in most cases made changing the oil a dirty and difficult job by placing the draincocks at the bottom of the crankcase where it was necessary to crawl under the car, getting covered with grease and dirt, and to unscrew the drain plug with a wrench in order to let the old oil out.

They also admit that many of the automobile engineers have devoted their educational efforts much more toward getting their car owners to use at the start an oil that suited their engine's requirements than toward getting the owners to keep the oil in condition through frequent changing where it had the desired character.

Lubrication experts in both industries, of course, stress the point that the motorist must put good oil into his crank case in the first place and that this good oil must be of the proper viscosity and flash point for his particular engine but they believe that there is far less ground for worry over the question of getting good oil than of the question of keeping it good.

Manufacturers Keep Silent

The fact that some motor companies have told their owners that it was unnecessary to change their oil oftener than every 1000 or 1500 miles, has led some other companies, in the fiercely competitive field, to keep quiet about their knowledge that the oil should be changed oftener in order to prevent wear of bearings, rings and pistons.

The chief engineer of a company making a medium-priced car stated that his company's conscience would not permit it to let the motorist believe that he could run his oil 1000 miles—whatever oil it was—without damage to his engine and that his company had consistently preached a gospel of changing every 500 miles.

"It has come to my attention that we have actually lost sales in some cases due directly to the fact that the customer regarded it as a defect in the car that the oil had to be changed so frequently," he said.

"If that's the case I won't buy your car. I'll buy a Stellar Six, you only have to change every 1000 miles with that car," the customer would say. And the engineer had no doubt that companies that preach such a gospel do lose, definitely, a number of sales on that account. Which is probably one reason why the automobile companies

"Change Your Oil Every 500 Miles"

If every oil company would use this six-word slogan in every piece of advertising copy it put out in the local daily newspaper, national magazine, billboard and folder and used it as well in every letter and invoice sent out to customers, there is no doubt that within a short time the effect on the motor oil business would be apparent. Look at the slogan of the paint and varnish companies, "Save the surface and you save all."

Some oil companies are doing this now. If more do it the effect will be that much stronger. It does not require any co-operative program arrangement among the companies to do it. It doesn't cost a cent.

If the automobile companies would do the same thing the effect of the campaign would be greatly strengthened and not only would the motor oil business of the industry be increased but the troubles of the automobile companies in regard to crankcase dilution and grief arising from improper lubrication would be far along toward solution.

And the technical department of the American Petroleum Institute might well take up with the technical department of the National Automobile Chamber of Commerce or the engineers of the S.A.E. the desirability of the automobile industry adopting and using the same slogan.

Adopt the slogan and use it everywhere.

"Change Your Oil Every 500 Miles."

have not urged frequent changing of the oil more heartily and effectively. They do not want to lose sales.

Drain Pits To Sell Oil

The oil companies have done a large amount of work educating the motorist and they are doing what they can to make changing oil easy and painless by providing drain pits and drain racks where the owner can get the dirty work done for him at a minimum effort on his part.

But the edcuational work of the oil companies and their sales efforts are actually retarded by the attitude of the automobile companies that prescribe 1000 miles or more of use between changing times of the oil. And their efforts are not helped any by the attitude of the motor manufacturers who say nothing about it.

The motorist often looks upon the efforts of the filling station man to get him to change his oil as only well-meant sales talk and doesn't take it very seriously.

The motorist, like every other human, dislikes doing a disagreeable thing and loves to find excuses for not doing. He finds one in an answer something like this to the salesman, or at least he frames it in his own mind.

"I believe this changing the oil every 500 miles is all bunk. My car doesn't need it. If it did the manufacturer or the dealer that sold me the car would have told me so."

A good many automobile companies have made great efforts to get buyers of their cars to use an oil that their engineers have found is particularly suited to their engines. Some of them prescribe the use of certain well-known and nationally distributed brands. Others even put out an oil compound to their own specifications, through their dealer organizations.

Oil Character Changes

But they seem largely to overlook the fact that the oil conforms to their specifications only while it is being poured into the crankcase. From the first time the engine turns over the character of the oil begins to change. This is not due, most engineers believe, to the "breaking down" of the oil itself, but to the constant dilution of it by the heavy ends of the motor fuel. This dilution is rapid or slow according to the weather, whether the engine was very cold when started, the efficiency of the engine's intake manifold and preheating devices and according to the condition of the pistons and piston rings in the engine. But it begins in some degree as soon as the engine starts to run.

And just in proportion to the speed with which the oil is diluted its usefulness decreases.

One engineer in the oil business, with years of experience with oil as it relates to the lubricating of automobiles asserts that where an engine is well made it will run almost forever without wear and without adjustment or overhauling if it is properly lubricated.

He cites an experience in his own family to prove it. Several years ago his father bought a Cadillac car. From the start an oil was used which was especially adapted to the car. It was changed at least every 500 miles. The result is that the car has run more than 150,000 miles and is still running sweetly. The bearings have never been taken up, the pistons or piston rings have never been touched and the valves have never been ground.

Of course, he points out, he had an exceptionally fine engine mechanically, to work on. Materials were of the best and workmanship was excellent. But he says correct lubrication would give proportionate benefits in any car, depending on how well built the engine was.

Correction

In an advertisement of the Conewango Refining Co., published on page 52 of this issue of National Petroleum News, under specifications of the company's "No. 114" cylinder stock the gravity is given as 282. This is an error due to the omission of a decimal point by the printer. The gravity of this oil should read 28.2.

The automobile engineers are thoroughly alive to the problem. Various developments in engine design and construction in the past two years have complicated the problem of lubrication considerably for some of them. Aluminum pistons are one of the features that have brought acute point to the lubrication problem because of their impervious surface and their higher heat. Some engineers have discarded aluminum pistons entirely, partly because of lubrication troubles.

The Oil Reclaimer

At the recent meeting of the Society of Automotive Engineers, considerable time on the program was given to the producer of an oil reclaiming device to be attached to the automobile engine which would continuously remove the lighter ends from the oil as the engine ran. The automobile engineers are all much interested in this device and most of them are experimenting with it to determine its adaptability to their own cars.

One car has adopted it already.

The device is pronounced excellent by the automobile world from an engineering standpoint but it is delicate and complicated, adding to the chances for trouble of which the motorist ignorant of his car already has more than enough. It takes a lot of room under the hood and it is a problem where to put it. It adds more or less weight to the car. It has a maze of small copper pipes which afford infinite possibilities of developing leaks or of becoming clogged up, either of which may have disastrous results.

It costs $30 or $40 to put on the car and that added expense either has to come out of:

1—The manufacturer's profit.

2—The buyer's pocket on the purchase price of the car.

3—The buyer's pocket through cheapening some other part of the car.

Probably few automobile manufacturers are looking for anything which will decrease their profits. Also, they will hesitate to add anything to the purchase price of the car with the tendency of prices the other way and competition to sell cars at fever heat. Cutting down on other parts of the car offer further possibilities of trouble.

And what would the buyer of a car equipped with the oil reclaimer get out of it in the way of benefit? The best claim for the device is that it will permit the car owner to drive 2500 miles without changing his oil. Then what? Is there any reason to believe that the motorist would be any more scruplous about changing his oil every 2500 miles than he is every 500? Wouldn't the same motorist who now runs his oil 1000 or 1200 miles without changing and takes the consequences, run 3000 or 4000 with the reclaimer without changing the oil and then take the same, although deferred, consequences?

This article is not to suggest any complicated, expensive or troublesome joint advertising campaign to be put on by the oil and automobile industries. Everybody knows that there must have been enormous increases in sales of paint and varnish through the adoption and use by all the paint and varnish manufacturers of the slogan with its clever paintbrush sweep, "Save the surface and you save all." Maybe the manufacturers of paint for the human (female) face have even profited from it.

Why wouldn't the oil and the automobile industries profit equally by using in every advertisement they publish the slogan "Change your oil every 500 miles?"

Many of the oil companies are doing that now. Both industries are big advertisers. Addition of that single short line, in a conspicuous position in every ad carried in every newspaper, magazine, billboard or direct mail folder would not cost a cent.

And after the slogan had been running for awhile, hitting everybody in the eye everywhere, wouldn't it begin to dawn on a vast majority of the 17 or 20 million drivers of motor cars in America that there might be something in the advice and wouldn't they begin to try it to a much greater extent than they have ever tried it before?

And if they did wouldn't it result in:

1—Fewer kicks to the automobile companies on their cars?

2—More business for the oil companies?

3—Better economy and satisfaction for the motorist?

Isn't it worth trying?

Cromwell's Biggest Well 5,000 Barrels: Magnolia Again Cuts Crude

By A. F. Hinton
STAFF REPRESENTATIVE

TULSA, July 29.

JUST as we were about to record that a week had gone by without a crude-cut, the Magnolia Petroleum Co. came along and rendered that statement null and void. That company's prices, already lower than those of other Mid-Continent purchasers, were reduced still more, the margin evidently having not been wide enough.

Following the present fashion of cutting down from the top, lopping off grades with a free hand in lieu of reducing prices all down the line, the Magnolia cut off its upper gravities, making 33 and over the highest grade posted, and offering a price of $1.25 for it. This is 50 cents less than other companies are paying for oil of similar grade. Prior to this change, the Magnolia had been paying $1.35 for 33 to 35.9 gravity and $1.50 for 36 and over. The three lower grades remain unchanged.

The Magnolia's prices now, and prior to to-day's changes, are as follows:

Old Price, Effective June 6

Under 28	$0.90
28-30.9	1.00
31-32.9	1.10
33-35.9	1.35
36 and over	1.50
Mexia	1.50
Corsicana light	1.50

New Price, Effective July 26

Under 28	$0.90
28-30.9	1.00
31-32.9	1.10
33 and over	1.25
Mexia	1.25
Corsicana light	1.25

The principal events of the past week from a production standpoint were the completion of Cromwell's largest well, together with a number of other good wells in the same field, and its continued increase in production, finally taking it beyond the 50,000 barrel-day figure; bringing in of the biggest well yet drilled in the Rainbow Bend field, Cowley county, Kansas; an extension of a mile of the gas area of Cromwell; and further development of the Wilcox pool now being drilled at Mounds.

Cromwell's Largest Well

Shaffer Oil & Refining Co. drilled in its No. 8 Yahola, Cromwell field, during the week, and it broke all records for this prolific field by flowing for a time at the rate of 220 barrels an hour. This well, which is located in the NEc NW¼ NW¼ of 22-10-8, topped the sand at 3400 feet, and has been drilled in 75 feet. Showing only for an average Cromwell well at first, it increases steadily as the sand was penetrated, and continued to increase for a while after drilling had stopped. The same company also is completing its No. 5 on this lease, in the SEc NW¼ NW¼, and it is flowing 40 barrels an hour at 32 feet in sand topped at 3404 feet. The company's production from this 80-acre lease is now better than 7000 barrels daily.

The farthest north gas well in the Cromwell field is the No. 1 Bruner, of the Central National Oil Co., located in the SWc SE¼ SE¼ of 4-10-8, one mile north of production. At 14 feet in sand topped at 3332 feet, this well was reported making 25 million feet of gas. From present indications, it would not be surprising if all of Sec. 9 should develop production, making the field more than two and one-half miles long, and at present there is no reason for assuming that it will not continue on northwestward even beyond that section.

Drilled Into Water

Another occurrence of water under the Cromwell sand was noted in the Tidal Oil Co. No. 1 Harjo, in the SEc NE¼ of 21-10-8, in the southern end of the field. This well, which has been producing several months, was deepened six feet during the past week, and increased its production from 12 to 20 barrels an hour. Water was encountered, however, in the last two feet of sand and it was necessary to plug the well back. This is the second well in the south end to drill through the sand and into water.

In addition to several big wells drilled in during the past few days at Cromwell, many more are on top of the sand, or near it, and will be in within a few days. Several large gas wells also have been brought in recently, most of them being drilled deeper now in the hope of finding oil beneath the gas. Among them, Snowden & McSweeney have a well making 52 million feet of gas in their No. 1 J. Harjo, in the SWc NW¼ NE¼ of 15, a quarter mile north and a location east of the original Cosden gas well. This well got the sand at 3416 feet and has been drilled to 3452 feet.

Gypsy Oil Co. No. 2 Willis, in the NWc NE¼ NW¼ of 15, a south offset to the 3500-barrel well of Burke & Greis, is making 100 barrels an hour and about 30 million feet of gas, in sand from 3443 to 3515 feet. This company also is deepening its No. 1 Z. Stidham, in the SEc SW¼ NW¼ of 15, and is drilling at 3534 feet.

Roxana Petroleum Corp. No. 1 Brown in the SEc SW¼ SW¼ of 10, a west offset to the Burke-Greis well, is drilling at 3468 feet and is making 35 million feet of dry gas. McMan Oil Co. No. 1 Little, a quarter mile east of the Burke-Greis well, and located in the SWc SE¼ of 10, is making 30 million feet of gas and spraying oil in sand topped at 3365 feet.

The Carter Oil Co. is proceeding rapidly with the development of properties recently acquired from J. I. Cromwell, and has completed several large wells, in addition to deepening some of the older ones. This company's No. 1 Roberts, in the SEc NE¼ NE¼ of 16, a north offset to the famous Hoffer well, was drilled eight feet deeper during the week, to total depth of 3530 feet, and increased its production to 108 barrels an hour. The same company's No. 2 Bruner, in the SWc NE¼ SW¼ of 15, the discovery lease, is drilling at 24 feet in the sand topped at 3561 feet, and is making about 900 barrels daily. The discovery well, a quarter-mile north of No. 2 is still making about 1350 barrels daily. The Carter Oil Co. and Gardner Petroleum Co. No. 1 Bruner, in the SEc SW¼ of 9-10-8, another of the leases taken over from the Cromwell interests, is pulling the big pipe to drill in after having topped the sand at 3420 feet. This is a north offset to the well of the Superior Oil Co., which is the farthest west well in the field to date.

With 50 producing wells, the Cromwell field averaged 47,650 barrels daily during the past week, and finished the week producing about 52,000 barrels a day. The big Shaffer well did not get into its full stride until late in the week, and thus did not have much effect on the weekly average. The field is maintaining its remarkable record of averaging 1000 barrels per well daily.

Cowley County Field Has Big Well

In the Rainbow Bend area of Cowley county, Kan., sometimes referred to as the Widows' Pool, the biggest well yet brought in is the Waite Phillips-Marland-Independent No. 3 Johnson, in the SWc NW¼ SE¼ of 20-33-3E, one location south of the discovery well in the field. It got the sand at 3201 feet and was drilled to 3227 feet, where it started off at the rate of 190 barrels an hour. It made 180 barrels an hour for the next six hours and then settled down to 100 barrels an hour. It made 2700 barrels in the first 24 hours after being drilled in.

Activity in this pool has become brisk, after having slowed down for a while, as the Kay County Gas Co. (Marland) has completed a line into the field, and all the oil can be handled without diffi-

culty. It will be remembered that this block of 3300 acres originally was owned by Waite Phillips and the Independent Oil & Gas Co. The latter sold a quarter interest, or half of its half, to Marland, for a consideration said to be $500,000.

Although the new well is by far the largest that has been completed in the pool, all the others have been substantial producers, and have been holding up well. The latest well is the eighth in the field, several others having been drilled in recently, among them being the No. 2 Wertman, in the SEc NW¼ of 20-33-3E, which topped the sand at 3188 feet and made 700 barrels the first 24 hours after having been drilled to 3215 feet. On the same farm, No. 3, located in the SWc SE¼ NW¼ of 20, was a 600 barrel well in sand from 3188 to 3216 feet. The same companies' No. 2 Glasgow, in the NWc NE¼ SW¼ of 20, made 700 barrels in sand from 3199 to 3229 feet.

Activity in Mounds Townsite

By way of showing that one well can cause a lot of excitement, it may be well to record that there are 25 wells drilling in the townlot development in the town of Mounds, Creek county, where the Riverland Co. recently got a well in the Wilcox sand. Several of these wells are on top of the sand, and the next few days' development may mean a lot of grief for a number of operators. On the other hand, it may mean the opposite, as some of these wells are showing good at present.

The Riverland well is about in the center of an 80-acre lease, and is not on the Mounds townsite, but, inasmuch as it is generally rumored around that all the town is on a structure, it did not take more than the one well to start a determined drilling campaign, and to start as well, a brisk trafficking in town lots. The Riverland is drilling three more wells on its lease, along the north and south road that separates the lease from the townsite, and on the west side of this road, derricks, drilling machines, slush pits, boilers, and other oil field paraphernalia are mixed up with houses, barns, gardens and garages, causing great inconvenience to the inhabitants, but giving them high hopes of future fortunes in store for them.

Current Production

For the second successive week, Oklahoma's production has remained almost stationary, increases in some fields being practically offset by losses in others, resulting in only a small net change. During the past week, Cromwell increased 5100 barrels in daily average.

Completions In Oklahoma And Kansas Week Ending July 26, 1924

OKLAHOMA

Carter County

Company	Well No.	Location	Lepth	Initial Production
Lathrop et al	1	C NW SE NE 28-1S-3W	3392-3414	165
Humble	2	C NE NW SE 28-1-3W	3292-3333	405
Wirt Franklin et al	1	C NE SW NW 28-1-3W	T.D.3510	Dry

Carter—Graham

Humble	1	SEc NE NE 22-2S-3W	2535-2560	80
Magnolia	2	C SE SW NE 23-2-3W	1975-2025	600
Southwestern	6	C SE NE SW 25-2-3W	2832-2833	12M
Magnolia	7	C SW NW SE 25-2S-3W	2718-2739	50
Westheimer	6	C SE NE SW 21-2-2W	3115-3141	120

Carter—Hewitt

Twin State	17	C NW NW SE 4-4S-3W	2333-2400	10

Carter—Brock

Iowa	3	NWc SW SE SW 17-5S-1E	1525-1565	20

Creek County

Savoy	2	NEc NW NE 23-17N-8E	2276-2310	50
C. P. Davis	1	NEc SW NW 23-17-8E	2770-2811	4½M
Tibbens	9	SWc SE 26-14N-8E	2469-2515	10
Transcontinental	1	C NW NW SW 34-16N-9E	2921-2940	35
Tibbens, C. G.	1	NWc NE NW 18-14-9E	972- 974	½M
Kelley et al	1	NWc SW NE 4-14-10E	3294-3304	240
Cosden	1	SWc NW 32-14-10E	3406-3413	277
Cortez	3	SWc NW NW 2-18-7E	T.D.3992 OWD	Dry
Texas	2	SEc NE 17-15N-10E	T.D.3156 OWD	Dry
West-Billingslea	1	NEc SE 22-14-9E	T.D.3783	Dry
Billingslea	1	SWc NW 23-14-9E	T.D.1017	Dry

Hughes County

Magnolia	2	NWc SE SE 4-9N-11E	2920-2935	60

Lincoln—Stroud

Roxana	1	NWc NE NE SW 12-14-6E	4103-3140	875

Lincoln County

Flynn-Morgan	1	SEc 2-14-5E	T.D.4474	Dry

Muskogee County

Peterson	5	C SE SE 18-14-17	T.D.1468	Dry

Okfuskee County

Henry-Avers	3	NEc NW SW 12-12N-11E	T.D.3198	Dry

Okmulgee County

Denver P & R	1	NEc SE 32-13N-11E	2476-2510 OWD	10
Frisco	2	CSL N½ SE NW 25-13-12E	2036-2041	20
Keaton-Gold	1	NWc SE 33-13-12E	1832-1872	10M
Newblock	1	SEc NE 36-16N-13E	T.D.1797	Dry
Bean-Wilder	1	NEc SE 12-12-12E	T.D.3198	Dry
Iron Mountain	5	CSL NE SW 13-13-14	1990-1994	15
Aiken	5	CWL NE NW 22-13-14	1795-1803 OWD	7M
Newman	2	NWc SW 17-12-13	T.D.2972	Dry
Black	1	SEc NE 25-12-13	T.D.2992	Dry
Tidal	7	SEc NW SW 18-13-14	T.D.2644	Dry
Kingwood	1	C SE SE SE 24-13-14	T.D.3321	Dry
Invader	4	NEc NW SE 2-14-14	T.D.2693	Dry
West-Payne	1	NEc NE 16-15-14	T.D.2360	Dry
W. O. Shock	2	SEc SW NE 19-15-14	T.D.2309	Dry
Sheldon	1	NWc 34-16N-12E	2138-2165 OWD	5M

Osage County

Gillespie	23	CEL NE 8-20-12	2122-2124	100
Markham-Breene	9	CNL NW 23-21-10	1590-1611	225
Barnsdall	19	NW SW NW NW 32-21-12	1860-1915	102
Sinclair	19	SE SW NE SE 32-22-10	1814-1849	50
Winona	2	C NW SW SW 27-24-10	1640-1655	7
Delmar	1	SW SE 27-25-8	2485-2510	40
Comar	1	SW NE 21-28-7	2755-2763	7
Gypsy	1	NW SE 2-23-10	T.D.2725	Dry

Osage—Burbank

Geo. Bole	5	C SW SE NW 4-27-5	2886-2916	642
Midland-Delmar	7	C NW SE NW 14-27-5	3046-3078	177
Midland-Delmar	16	NE NW 14-27-5	2996-3015	187
Cosden	11	C SE NE SE 14-27-5	2996-3010	225
Skelly	2	C SE NE SW 26-27-5	2898-2965	60
Skelly	3	C NE SE SW 26-27-5	2885-2965	5
Skelly	3	C NE SE NW 35-27-5	2892-2964	75
Skelly	4	SE NW 35-27-5	2891-2977	50
Gypsy	14	C SW NW NW 19-27-6	2917-2979	15
Phillips	5	C SE SW NW 20-27-6	2884-2950	150

Pawnee County

Mullendore et al	1	NWc SW 15-20N-7E	2901-2914 OWD	20

Pontotoc County

Gilbert et al	2	SWc SE SE NW 28-3N-4E	T.D.1002	Dry

Pottawatomie County

Magnolia	1	C SE SW NW 18-7N-5E	3590-3610	8

Seminole—Cromwell

Burk-Greis	1	C SW SE SW 10-10N-8E	T.D.3500	25M
Mid-Kansas	2	C SE NW NW 15-10-8E	3436-3487 OWD	300
Cosden	1	SEc SW NE 15-10-8	3380-3404 OWD	30M
Carter		NWc NE SW 15-10-8	3480-3517 OWD	2160
Gilliland et al	1	C NE SW NE 16-10-8E	3493-3510	2872
Amerada	3	C NW NE SE 16-10-8E	3507-3560	1250
Gypsy	2	C NE SE SE 16-10-8	3512-3565	1440
Gypsy	4	C NW SE SE 16-10-8	3529-3574	960
Tidal	7	C NW SE NE 21-10-8	3474-3548	960
McMan	3	C NE SW NW 22-10-8	3395-3436	1440

Seminole County

R. H. Smith	1	SWc SE NW 23-7N-7E	2680-2702 OWD	10M

Stephens County

Malernee et al	6	CSL NW SW 20-1S-8W	2305-2320	135

Tillman County

Okla Tex	5	SWc SW SE NE 4-5S-14W	T.D.2572	Dry

Tulsa County

Shaffer	6	NEc SE SW NW 4-19-12E	2056-2062	30
Simmons et al	3	NWc SE NW 4-19-12E	1970-1985	150
Echo	7	NEc SW NE 5-19-12E	2091-2101	100
S. S. Home	3	SEc SW 6-19-12	2046-2054	330
S. S. Home	4	CNL NW NE 7-19-12	2042-2051	30
S. S. Home	7	NEc NW 7-19-12	2041-2055	30
Thompson-Black	2	CEL NE NE 7-19-12	1960-1976	100
Choctaw Drlg	1	NW NW 8-19-12	1961-1972	30
Hughes-Worley	1	NW NW 8-19-12	1973-1979	20
Henry-Avers	1	NW NW 8-19-12	1964-1972	30
G. N. Wright	1	NW NW 8-19-12	2217-2277	150
McFann et al	1	C SW NE 16-19-12	2217-2277	20
Eastern	1	C NW NW 7-19-10	T.D.3009	Dry

Wagoner County

Whaleback	7	SWc NW NE 15-17-16	731- 756	20
Larsarskay	1	NWc SE NW 25-17-16	3137-3145	3M
A. E. Carder	3	SWc SE NE NW 15-17-16	T.D. 950	Dry
Harris Hays	1	NEc SW 15-17-17	T.D.1144	Dry
J. Hansman	3	C NE NE NW 26-18-16	T.D. 645	Dry

KANSAS

Butler County

Skelly-Davis	5	SEc SW NW 25-28-5E	T.D.2860	Dry
Crumm et al	2	SWc SE SW 7-29-6E	T.D.2867	Dry

Chautauqua County

Page et al	1	SWc SE SW NE 18-32-10E	2045-2048	20

Cowley County

Trees	1	NEc SE 10-31-3E	3041-3053	45
Southwestern	3	CNL NW NE 6-31-6E	2878-2883	75

Greenwood County

D. M. Rhodes	6	SWc 17-22-10E	2371-2449	75
Mid-Kansas	3	C SE SW SE 30-22-10	2479-2495	100
Mission-Roth	41	CSL N½ S½ SW 28-23-10E	2281-2340	100
Mission	4	NWc SW NW SW 32-23-10	2255-2207	200
Gypsy	7	CWL NW NW 12-24-9E	2242-2304	100
Gypsy	8	CNL NW 12-24-9	2287-2344	100
Roxana	3	CSL SE NW 34-24-9E	2206-2247	140
Milliken et al	1	SEc NW SE 16-22-11E	T.D.2124	Dry
Basom et al	1	NWc SW SE 31-24-9E	T.D.2478	Dry
Collins-Frantz	1	SEc NE 33-32-2E	T.D.3555	Dry

Drilling Operations in Oklahoma, Kansas and N. Texas July 26, 1924

	July 26——Week Ending——July 19									
	Loc.	Rigs	Drg.	S.D.	Total	Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Burbank	15	19	79	2	115	16	26	57	3	102
Other Osage	12	8	73	26	119	14	9	79	21	123
Bristow-Cushing	5	22	140	31	198	4	29	141	30	204
North Oklahoma	9	10	65	57	141	8	10	68	54	140
South Oklahoma	14	16	137	76	243	14	12	142	78	246
Muskogee	...	15	38	37	90	...	13	47	38	98
Okmulgee-Bristow	1	64	124	68	257	1	69	135	63	268
Tonkawa	1	1	63	6	71	1	2	64	4	71
Wewoka	13	28	172	28	241	14	36	175	26	251
Total Oklahoma	70	183	891	331	1475	72	206	908	317	1503
KANSAS	37	68	160	97	362	36	65	175	83	359
NORTH TEXAS										
Eastland County	...	5	28	12	45	...	2	33	11	46
Stephens County	...	18	52	53	105	...	20	59	29	108
Texas Panhandle	...	5	31	10	46	...	5	31	10	46
Mexia District	...	33	31	11	75	...	30	31	11	72
E. Texas Wildcats	...	16	14	67	97	...	14	14	72	100
W. Texas Wildcats	...	52	126	101	279	...	45	129	95	269
Total N. Texas	...	129	282	236	647	...	116	297	228	641
GRAND TOTAL	107	380	1333	664	2484	108	387	1380	628	2503

going up to 47,650 barrels, and is now actually producing better than 50,000 barrels daily. Tonkawa also registered an increase, jumping 1130 barrels to a daily average of 38,130 barrels. Cromwell's production was coming from 50 wells, while Tonkawa has 679.

Burbank showed the largest decrease of the week, falling off 2815 barrels to a daily average of 82,685 barrels, in spite of the addition of seven new wells. Wells producing in that field now total 1548. The Osage side of the field is producing 64,090 barrels from 1359 wells, while the Kay county extension has 189 wells making 18,595 barrels daily.

Stroud continued the decline which has been in progress for the past few weeks, going off 1480 barrels and averaging 16,810 barrels daily. Three new wells were added to the field's list of producers during the week, bringing the total to 28. Wewoka, after increasing somewhat for two weeks, fell off slightly during the past week, showing a daily average of 6890 barrels, as compared with 7600 barrels the preceding week. This field now has 67 producing wells, an increase of one over the week before. The Papoose field, Hughes county, gained one well, making its total 28, and increased 240 barrels in production, averaging 8890 barrels daily.

Kansas recorded a substantial increase in production during the past week, going up 2970 barrels to a daily average of 80,015 barrels, the first time that state has been over the 80,000 barrel figure for some time. The principal source of this increase was the 2700-barrel well drilled in the Rainbow Bend field, Cowley county, by the Waite Phillips Co. et al.

Wells Completed

In Oklahoma, during the week just closed, 94 wells were completed, of which 60 were oil wells, 10 were gas wells, and 24 were dry holes. This compares with last week's figures of the same total of 94 completions, divided 56 oil wells, two gas wells, and 36 dry holes.

The 60 oil wells included in this week's report had a total initial production of 20,644 barrels, an average of 344.1 barrels per well. Last week, 56 oil wells brought in 32,826 barrels of new production, with the high per-well average of 589.8 barrels. Last week's figures, however, including one 8000 barrel well, partly explaining the high total initial. This week, there were a number of large wells reported from Cromwell, but aside from them, most wells were of only average size.

Completions reported from Kansas this week totaled 15, of which 10 were oil wells and five were dry holes, with no gas wells. The 10 oil wells had a combined initial production of 955 barrels, averaging 95.5 barrels each. Last week, there were only seven wells reported from Kansas of which two were oil wells and five were dry holes.

Humble Bui'ds Pipe Line North From Ranger

Staff Special

HOUSTON, July 29.—Humble Pipe Line Co. announces the definite intention of constructing approximately 50 miles of 6-inch pipe line to connect its Wichita Falls district gathering system with that which already serves the Stephens and Young county divisions of the General Ranger territory.

When this new work has been completed, crude from the Wichita and Archer county producing areas will be moved southward via Ranger to the Gulf of Mexico terminals of the pipe line, near Texas City.

Ranger runs are insufficient to keep the line southward to the Gulf full of this grade of crude, which is handled without contamination of shipments. This cylinder stock base crude will continue to be handled in an unmixed state, the Wichita Falls district oil being handled in "batch" shipments.

Humble Oil & Refining Co., which for almost a year had been out of the Wichita Falls district market as a purchaser, announced earlier in July that it would re-enter that territory as a buyer, posting a price of $1.50 a barrel for crude testing 33 Be. gravity, and above, for Wichita and Archer counties.

Wildcat Finds Stray Sand At Shallow Depth

Staff Special

TULSA, July 28.—In drilling a wildcat test south of the Slick field, the Damar Producing Co. picked up a stray sand that has given them what may be termed a freak well. A sand not heretofore known to exist in the vicinity was encountered at 272 feet and drilled into to 291 feet, from which oil testing 51 gravity at temperature of 72 deg. Fahrenheit is being produced.

The well is being pumped with a steam jet lift which is taking its maximum capacity of 60 barrels out of the well daily. The operators believe the well would yield more if the steam jet were more efficiently connected up, but so far have been running it with steam from the drilling boiler, and have made no particular effort to increase the production.

When the shallow sand was found, it was decided to drill another hole down to it immediately, so that drilling could proceed with the original test. Accordingly, drilling was stopped on the regular well and the tools were swung over to a point about half way between the original hole and the bull wheels, where another hole was started. This was taken down to the shallow sand, the steam jet was rigged up, and drilling proceeded on the original well. They didn't skid the rig, but skidded the tools, instead. For a day or two, when both holes were producing from the shallow sand, they had about 200 barrels of this high gravity oil daily.

Sinclair is running the crude, and had taken out 17 tanks, or about 8500 barrels, when the writer was at the well. This means that this lucky find has been worth more than $15,000 to the producers, already. The Damar company is a combination of the names of C. P. Davis and "Doc" Martin, independent producers, both of Bristow. At that rate, their Dutcher sand test won't cost them anything, for the shallow well will soon have paid for it.

A number of other tests have been put down in various directions from the well, and most of them have found the shallow sand, but got no oil in it. Several are still drilling, using small water-well outfits. One was using a Fordson tractor for power, and was pounding on down at a great rate, making lots of noise if not a great deal of hole. Evidently no holds are barred in this shallow drilling, for these boys are crowding the line something scandalous.

The Damar well is located in the NE¼ SE¼ SE¼ of 8-14-10, on the Tiger allotment and with the exception of one well about a mile northeast, is two miles from the nearest production, in the south end of the Slick field.

SHREVEPORT, July 28.—A voluntary bankruptcy petition has been filed in the federal court here by Posey and Rodriguez, derrick and rig builders of Haynesville, La. Liabilities are listed at $54,049.57; assets none.

Patterson Lake Per Well Production Averages 300 Barrels Daily

By Paul Wagner

STAFF REPRESENTATIVE

HOUSTON, July 24

THE narrow pool southwest of Powell that has come to be known as the Patterson Lake development averaged marketed daily production last week of 12,414 barrels from 41 producing wells.

Although there had been some shut in production earlier in the month, this has virtually disappeared and at the most only a few hundred barrels daily of potential production fails of being run either to pipe lines or to field storage.

Only a few of the wells are flowing most of them either being swabbed or on the pump. This practice is ordinarily resorted to immediately after their completion. The first production on air in the field was that of the Humble Oil & Refining Co.'s No. 1 Sheffield well, which did not give the desired results, whereupon it was placed on the pump.

After the Prairie Pipe Line Co. had abandoned taking on new connections and the Texas Pipe Line Co. recently announced its policy of only storing oil in the Patterson Lake district, the Pure Oil Pipe Line Co. built in to connect with the property of the Atlantic Oil Producing Co.

The Patterson Lake development, which is also known as the Richmond pool, because of its proximity to this Navarro county town, lies immediately north of the gas area in the older Currie-Wortham field.

From the farthest southwest well of the Atlantic Oil Producing Co., on the B. L. Swink tract, to the northernmost well of McDonald Brothers, on the H. A. Swink, is a distance of nearly a mile and a quarter. At the widest point, the field is no more than 2000 feet in breadth.

Water produced with the oil is a factor in wells that are drilled too far into the relatively thin sand, which reservoir does not compare at all favorably with either Mexia or Powell.

Plugging back operations are being carried ahead in the A-1 Davis well of the Oxford Oil Co., and the No. 1 B. L. Swink of the Atlantic Oil Producing Co., both of which developed material quantities of brine upon being deepened from the levels of their initial flows.

Development in the Patterson Lake pool bears relation to a fault line against which oil accumulation has been banked up at the Woodbine sand level, similarly as at Powell and Mexia, but on a smaller scale; this pool lacking the possibilities that attached to these earlier fields and constituting no promise of additional sustained production in the sense of materially increased daily averages over and above the present field mark.

When the Sun Oil Co's. No. 2 W. P. Brown well came in early in June with initial production of 2760 barrels the temperature began rising and by the end of the first week it had reached 105 degrees F. showing 5 per cent of b. s. and 1 per cent of water. Before 10 days had elapsed the water encroachment had increased to as much as 15 per cent.

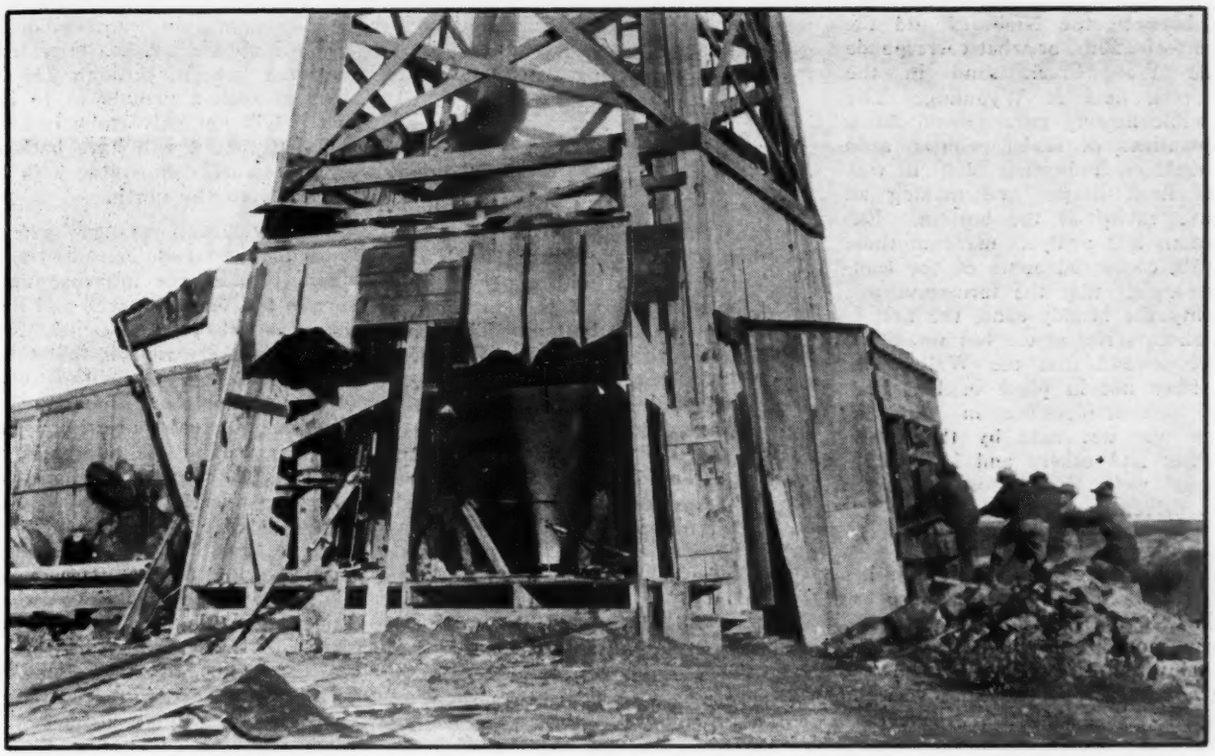
An accompanying tabulation, showing dates of completions, initial productions and July 19 daily average runs by leases, provides a workable index to field conditions in Patterson Lake development area. The maximum daily production column, however, does not in every case show the initial, or first 24 hour, production of the individual well.

In some cases, where maximum production exceeded the initial flow, the higher yield is shown.

Tabloid Record of Richland Pool Wells and Production

Company	Lease—Well	Week Completed	Total Depth	Maximum Daily Prod., in Bbls.	7-19-1924 Daily Avg., By Leases	Ppl. Runs
McDonald Et al.						
	A. N. Brown 1	2-4-1924	2977	150		
	A. N. Brown 2	5-26-1924	2975	125		
			Lease Total	275		370
McDonald Brothers						
	H. A. Swink 1	3-28-1924	2962	480		
	H. A. Swink 2	6-26-1924	2963	580		
			Lease Total	1060		52
Sun Oil Co.						
	W. P. Brown 1	.....	2915	200		
	W. P. Brown 2	6-3-1924	2955	2760		
	W. P. Brown 3	7-2-1924	2952	350		
	W. P. Brown 4	6-23-1924	2950	150		
	W. P. Brown 5	7-2-1924	2957	950		
	W. P. Brown 6	7-2-1924	2946	350		
	W. P. Brown 7	7-9-1924	2956	3300		
			Lease Total	8060		5138
Atlantic Oil Producing Co.						
	B. L. Swink 1	7-9-1924	2967	800	25% water after deepening 2 ft.	
Golley Oil & Gas Co.						
	Allison 1	.....	2988	1200		
	Allison 2	5-14-1924	2970	460		
	Allison 3	6-15-1924	2978	700		
	Allison 4	7-2-1924	2985	550		
	Allison 5	6-25-1924	2977	450		
			Lease Total	3360		2370
Boyd Oil Corp. (Humphreys et al)						
	Webb 1	5-28-1924	2955	490		
	Webb 2	6-10-1924	2980	550		
	Webb 3	6-18-1924	2972	750		
	Webb 4	.....	2955	450		
	Webb 5	.....	2967	300		
	Webb 6	7-17-1924	2968	1000		
	Webb 7	7-2-1924	2966	550		
			Lease Total	4090		2353
Hallmack Oil Co.						
	Webb 1	6-16-1924	2958	250		
	Webb 2	7-2-1924	2960	325		
	Webb 3	.....	2953	400		
	Webb 4	6-23-1924	2959	600		
	Webb 5	7-17-1924	2979	400		
	Webb 6	7-17-1924	2974	450		
			Lease Total	2425		321
Rowan Et al.	Brown 1	.....	2983	350		196
	Davis 1	7-2-1924	2978	350		71
Travis, Gutman & Appleman (Providence Petroleum Co.)						
	H. A. Swink 1	7-21-1924	2993	200	(Deepened)	
	H. A. Swink 2	6-15-1924	2984	150		
			Lease Total	350		350
Tucker Et al.						
	Davis 1	6-23-1924	2965	2000	26% water, 9% b. s.	
	Davis 2	7-21-1924	2968	720		
			Lease Total	2720		233
Stroube & Stroube						
	Davis 1	.....	2967	300		160
Oxford Oil Co.						
	Davis 1	6-23-1924	2964	455		
	Davis A-1	7-17-1924	2965	1100	Deepened, making 60% water	
			Lease Total	1555		260
Graves Brothers						
	Graves 1	6-16-1924	3040	Salt Water		
Humble Oil & Refining Co.						
	Sheffield 1	6-30-1924	2976	280		115
Simms Oil Co.						
	Gordon 1	.....	2977	960		425

otal daily average marketed production July 19, of field, 12,414 barrels.



While men on the derrick floor of the Mitchell well endeavored to turn the frozen valve, they were aided by men on the outside with a rope attached to the stem. Five men on one side would endeavor to pull the wheel half way around the circle and five men on the other side endeavored to pull it back the other half of the circle. Photo by Russel H. Forbes, Denver

Union's Second Gasser On Wellington Blows In And Catches On Fire

By Tolbert R. Ingram
Special Representative

DENVER, July 28

THE Union Oil Co. of California couldn't get away with uninterrupted good luck on high pressure—large open flow gas wells on Wellington dome, north Colorado. Its first big well, which blew in last November, was wild for 49 days and was shut in without mishap. But the second one caught fire.

No. 1 Mitchell, on Wellington dome is the second well. It is 10 miles north of Fort Collins, in Larimer county, is 65 miles north of Denver and 20 miles south of the Wyoming boundary. It blew itself in from a depth of 4210 feet on Saturday night, July 19, and four days later, in the afternoon of July 23, took fire. The cause is unknown but is believed to be due either to a friction spark from pebbles being thrown against the valve or electric spark generated by the discharge of gas from the casinghead.

The valve is about two-thirds closed and it is estimated that 30,000,000 feet daily is flowing through the opening.

The initial flow was estimated at 80,000,000 to 100,000,000 cubic feet per day with a pressure of 1600 pounds to the square inch. The gas at first was white like steam and dry but on the third day commenced to darken and give every evidence of turning to oil. The tools did not reach the sand and the identity of the formation is still in doubt.

The results of the discovery is accepted generally as proving the Wellington structure to be of far greater importance than heretofore suspected with little doubt of it becoming one of the great oil producing fields of the country. All calculations heretofore made as to the probable productive area and its relationship to neighboring structures have been so completely upset by the geological data disclosed by actual drilling that the full significance of what has taken place is largely confined to the realm of speculation. But that it is an outstanding oil development of recent years is accepted by all.

The acreage on the Wellington dome was secured by the Union Oil Co. of California two years ago and in March, 1923, it commenced a deep test on the SW¼ of the NW¼ of 31-10-68. On Nov. 9, 1923, this well, at a depth of 4280 feet, commenced making small quantities of gas. There was considerable open hole at the bottom and the crew made preparations for running the casing and bringing the well in. The work of lowering the casing into the hole was just starting on the morning of Nov. 11 when the well blew itself in with a flow of 82,000,000 cubic feet of gas. The gas was dry and made a white vapor the color of steam. The pressure was so great that it broke away the fittings, parted one of the strings of casing, made its way up outside the smaller string and flowed unchecked for 49 days. About two weeks after it blew in, the gas became darker in color and began showing traces of oil. The color changed at intervals in such a manner as to indicate it was flowing by heads. Within a few days after the first appearance of the oil, it was spraying crude for many miles around the well site, destroying forage crops of farmers, blackening houses and fences and discoloring everything that fell within its range. The output was accompanied by a roar that could be heard for miles and workmen had to wear army gas masks, plug their ears with cotton and work in a shower of oil in their efforts to bring it under control.

The opinion was held at that time that the gas was coming from the shale just above the Nio-Benton sand, in the

break between the Niobrara and the Benton formations, or what corresponds to the Wall Creek sand in the Salt Creek field in Wyoming. The well, while flowing unrestrained, threw out quantities of shale, pebbles, sand and boulders, indicating that it was drilling itself deeper and making an immense cavity at the bottom. Examinations and analysis made of these materials convinced some of the leading geologists that the formation was in reality the Muddy sand, the first in the Dakota series at the bottom of the Cretaceous and that the Wall Creek was either not in place or had been passed without identification. But this opinion was not held by the Union geologists and others and in locating additional wells this factor was taken into consideration.

Identification Important

The importance of this question lies in several directions. If the discovery was in the Wall Creek there were two or three more possible producing horizons below the horizon of the discovery. On the contrary, if the sand was the Muddy, it was nearer the surface than supposed and would not mean as deep drilling as otherwise.

To correctly appraise the significance of the new strike, it should be pointed out here that directly south of the Wellington dome, 11 miles, lies another structure called the Fort Collins dome. Just to the west of the saddle between these two structures is another smaller structure called the Douglas Lake dome. Geologically, the three structures are separated by deep synclines.

When the discovery well was finally shut in, the Union company at once completed its leasing on the Fort Collins dome and acquired most of the acreage on the Douglas Lake structure. Its geological staff made new surveys and located the Mitchell No. 1 on the SW¼ of NE¼ of 6-9-68, about one mile to the south and east of the discovery. This location had a surface elevation 65 feet lower than No. 1 and was estimated to be 125 feet lower on the structure. It was believed to be so situated that it would miss the immense gas pressure encountered in No. 1 and strike the oil. Then, it went half a mile to the southeast and located the Scott No. 1 which was equipped with steel re-inforced derrick 125 feet high, a combination standard and rotary rig and crown block capable of lifting 1,250,000 pounds. The purpose of this well is to go through the upper sands and test all formations within the reach of the drill and definitely establish the identity of the formations.

Another well was located 11 miles to the south of the discovery, on the NW¼ of NW¼ of 30-8-68, to test the Fort Collins dome. This is known as the Whitaker No. 1. Another well was located on the NW¼ of NW¼ of 36-9-69 to test the Douglas Lake structure.

Ready To Control Well

With this layout the drilling of the tests commenced. The Mitchell No. 1, a mile to the south of the discovery, was the first to come in. The company had made every possible plan for the bringing in of the well under complete control. An immense gate valve and control head had been placed on the top of the casing. The cellar had been lined with cement and the several strings of casings had all been heavily cemented at the bottom and clamped together at the top. The 8¼-inch casing had been filled with water to hold back the pressure and this casing had been landed at the bottom. The tools were out of the hole and the bottom was still 35 or more feet above the estimated depth of the sand. The men were idling around the well when one of them noticed that the water had commenced to bubble. That was the signal for them to disperse and they had hardly left the derrick floor before the gas made its way through the intervening shale and shot out of the top of the casing with a deafening roar. This roar was signal enough to warn all within miles of the well that it had come in.

It was decided that on account of darkness following the extinguishing of all lights, that nothing towards closing the big gate valve would be done until the next morning. It was supposed that all that would be necessary would be to gradually close the valve and this effort was made at day break. But it was found that the rapid expansion of the gas as it was released from the well had created an intense cold which had frozen the valve so it would not work. Ropes were attached to the valve stem and workmen leaned to in an effort to accomplish the task. The valve stem broke. Workmen chiselled a new shoulder for another valve stem, in the face of possible death from the ignition of the gas by a friction spark. Again, the men tugged at the ropes and valve did not move. Four attempts were made and each time the valve stems broke. At last, it was decided to swing another gate valve into place above the one that would not work.

Gasser Was Expected

The drilling of the Mitchell well had not long been in progress before there were signs that structural conditions were not what they had seemed to be. The log tallied so closely with the log of the discovery well that a dip of not more than 50 feet in the intervening space of more than a mile was indicated. From that time on it was expected by the officials that the well would come in as a gasser instead of oil and all preparations for its control were made with that end in view. The last drilling showed that the actual difference in the depth of the two wells geologically was only 6 feet.

Before the significance of the structural changes is pointed out, attention is directed to the Whitaker well, 11 miles south of the discovery, on the Fort Collins dome, supposedly, a separate structure. This well is down 4300 feet and estimated to be 230 feet above the sand. Approximately 1000 feet of oil is standing in the Whitaker well. This oil, apparently, has migrated from the sand beneath through 230 feet of shale in such a manner as to indicate that it will not only come in as an oil well but that it will have back of the oil a pressure comparable with that in the wells to the north.

The conclusion reached by practically all the geologists consulted as to the significance of the immense gas pressure in the Whitaker well and the manner in which the log tallies with that of the discovery well, is that the structure is flattened out on top to a much greater extent than supposed and that all the intervening territory between the two wells is definitely proven for gas. As to whether it means a larger structure than at first supposed, there is a difference of opinion. Some hold that the area will be but slightly enlarged owing to the extreme dips on the east and the synclines on the south and west. Others express the opinion that the enormous gas pressure shown to exist in the top of the dome is sufficient to force back the water, should there be any, in the synclines and make them productive. That would make it practically one continuous structure at least 15 miles long and possibly 25 miles as the northern trend of the major fold is not clearly established.

Doubtful Questions Exist

While the possibilities of the new field are clearly indicated by the data already furnished by the two wells, it is evident that additional drilling will be necessary to determine a number of questions about which there still remains much doubt. Neither No. 1 well nor the Mitchell well were drilled into the sand. It is not clearly established, therefore, as to where these sands are located. While the depths at which they came in were relatively the same, there is no way of knowing just how far the gas went through the shale in its way up to meet the drills. It may have been 10 feet or several times that distance as is conceivable when the tremendous gas pressure is taken into consideration. Neither is it known from what source the oil is coming. It may be from a sand beneath the gas, or the bottom of the gas sand or it may be out on the flanks of the dome. The behavior of the wells indicate that as a gas field it will not have permanency stability but that it is primarily an oil field.

A feature of the Mitchell discovery that may have some bearing on conclusions is that when it came in, a test of the discovery well a mile to the north was made and it showed no change in pressure which still holds up to the original figures of 1435 pounds to the square inch.

TULSA, July 26.—Jacob France, newly-elected president of Cosden & Co. went to the Cromwell field today to inspect the company's holdings in that vicinity. He was accompanied by Henry Greis, oil producer, and stockholder in Cosden & Co.

Two Million Barrels Luling Crude Sold Magnolia And Atlantic

By Paul Wagner

STAFF REPRESENTATIVE

HOUSTON, July 27

TWO new contracts of the United North & South Oil Co. provide for the delivery of 2 million barrels additional crude oil from the Luling field, in Caldwell county, which it largely controls.

One of the contracts calls for 1 million barrels for delivery to the Magnolia Petroleum Co., whose 8-inch all-welded pipe line from the Luling field to its Beaumont refinery is now at the point of completion.

The other 1 million barrel contract is with the Atlantic Oil Producing Co., subsidiary of the Atlantic Refining Co., to be handled in tank car shipments to Houston, where it is loaded through the United Central Oil Co. terminal for coastwise tanker shipment to Philadelphia.

Magnolia Petroleum Co., whose pipe line runs from the Luling field had totalled 2,539,965 barrels, July 1, had received 1,841,730 barrels on that date from the United North & South Oil Co. Its tank farm stocks at Luling totalled 1,448,787 barrels; and its stocks at the 7000-barrel refinery operated at Luling included 315,722 barrels of fuel oil, 71,191 barrels of distillates and 16,523 barrels of crude held at the refinery.

Atlantic Oil Producing Co. had received from the United North & South total deliveries to July 1 of 1,519,922 barrels. Its tank farm stocks at Luling were at a minimum, shipments in tank cars for the month of June having totalled 637,737 barrels.

Daily average production of the United North & South Oil Co., which totals more than two-thirds of the field's output, was 32,781 barrels in June. As late as July 15, it was averaging the delivery daily to the Atlantic of more than 25,500 barrels daily against its new contract obligation.

Field Exploited About Year

The United North & South Oil Co., which drilled the "discovery" well of the field a year or more previously, got important exploitation under way only about 12 months ago. For that reason and for practical purposes, Luling may be said to have been a producing oil field only a year. For the life of the field production has been roundly 7 million barrels. Or about 50 per cent of its estimated total ultimate yield.

In addition to the Atlantic and Magnolia runs, the United North & South has made deliveries to the Mutual Pipe Line Co. of Texas, an Independent enterprise, totalling 934,229 barrels to July 1, last; and 39,118 barrels to the Humble Oil & Refining Co.

The United North & South at the present time has 38 wells actually under way, in the various stages from definite locations to drilling operations nearing completion. Its program is understood to call for the drilling of approximately that number of additional wells on ground considered proven for production.

Outside of the United North & South's operations, little development is going ahead at the present time. Grayburg Oil Co., of San Antonio, has 10 wells under way, in one stage or another; the J. K. Hughes Developing Co., 2 wells; Danciger and others, 3 wells; and an occasional well is being put down here and there as an individual test.

Luling Field Production Averages, B. S. and Water Percentages

Company—Lease	No. Wells	June Net Daily Production	B.S.& W.
GUADALUPE COUNTY DIVISION			
United North & South Oil Co.,			
Allen	24	6552	63%
Allen "A"	4	875	68%
Baker	14	8020	25%
L. Marines	11	4717	40%
McKean "A"	1	70	25%
McKean "B"	6	1757	63%
Roberts	1	79	76%
Shanklin	1	92	82%
Carter	1	8	99%
Danciger et al			
McKean	5	1212	25%
Grayburg Oil Co.,			
Allen	4	1550	80%
McKean	5	642	30%
Magnolia Petroleum Co.,			
Schubert	4	1323	33%
The Texas Co.,			
Allen	7	2043	63%
Thorman et al			
Harris	1	61	45%
J. K. Hughes Development Co.,			
Allen	10	2321	50%
C. C. Cannan			
Allen	1	90	95%
CALDWELL COUNTY DIVISION			
Caldwell Oil Co.,			
Hardeman	5	200	75%
Evans Oil Co.,			
Byrd	1	89	75%
Grayburg Oil Co.,			
Merriweather	6	442	60%
Byrd	2	66	75%
Proctor	8	773	35%
Tabor	9	605	75%
Jarmon Oil Co.,			
Moore	5	525	50%
Magnolia Petroleum Co.,			
C. Boyd	3	268	50%
N. Byrd	3	190	35%
Merriweather	6	360	35%
Midwest Texas Co.,			
Byrd	1	34	25%
Phillips Oil Co.,			
Byrd	1	83	25%
Prairie Lea Oil Co.,			
Merriweather	5	153	60%
Rydal Oil Co.,			
Byrd	2	175	45%
Sunland Oil Co.,			
Hardeman	3	240	40%
Rio Bravo Oil Co.,			
Merriweather	10	801	35%
United North & South Oil Co.,			
Byrd	3	339	67%
L. Byrd	4	461	55%
L. Byrd Fee	3	695	37%
Gideon	5	1011	31%
Hardeman	6	462	66%
Malone	1	31	92%
Alf Mercer	6	475	59%
F. Mercer	5	512	72%
Marion Mercer	3	380	42%
Mills Mercer	5	453	52%
Milton Mercer	5	658	66%
Tabor	13	1461	60%
Trammell	4	316	19%
Rios	9	732	62%
Stair	4	525	29%
Proctor	8	1596	16%

Water Factor In Production

Producing conditions in the Luling field, where water is an important factor in production, have been discussed in detail in this publication at various times. In the latest of these discussions, appearing on page 21 of the June 4, 1924, issue, it was pointed out that greater recoveries of crude are possible because of the presence of this water than would be permitted in sand territory under gas rather than hydrostatic pressure.

It was also pointed out in some detail that the 28 gravity crude separates out from the accompanying water under dehydration methods and the use of Tret-O-Lite, notwithstanding that the water percentages in production practice vary from 3 to 90 per cent of the total flow of the wells. No wells in the field produce without the oil being accompanied by some percentage of water; but the presence of gas as well as hydrostatic water pressure makes for a condition under which oil from the older wells is treated more easily than that from the newer completions, because the fluid shows less emulsification.

An accompanying table showing daily average net production by leases for the month of June also gives a record of the B. S. and water content of the wells. These generally represent the average percentages for the entire lease, because generally treating of the oil is accomplished at a central plant. Some wells flow directly into earthen flow tanks at these central treating plants; production from pumping wells, however, being generally collected in steel storage, where some of the water is taken off.

Ordinary methods of "bleeding," plus chemical or electrical dehydration, are practiced almost entirely in this field. In some instances, excelsior is used to collect additional free water after treatment by chemical agents before the oil goes into stock tanks, as referred to in a previous article in this publication. This practice, however, is not general.

Average July Production

A 10-day production report covering the daily average for the first 10 days of July, follows:

Company	Production
The Texas Co.	608
United North & South	29,807
J. K. Hughes	4,105
Danciger et al.	1,569
C. C. Cannan	943
Grayburg Oil Co.	3,795
Magnolia Pet. Co.	1,843

Evans Oil Co.	85
Phillips Oil Co.	36
Prairie Lea Oil Co.	212
Rydal Oil Co.	160
Midwest Texas Co.	28
Rio Bravo Oil Co.	370
Sunland Oil Co.	150
Jarman Oil Co.	400
	44,111

Pipeline runs for the same period totalled:

Company	Barrels
The Texas Co.	608
Atlantic	23,731
Magnolia	1,844
Grayburg	4,187
National	310
Mutual	13,109
Rio Bravo	370
	44,159

Luling Runs, Shipments and Stocks

Detailed figures on June tank car shipments and pipeline runs in relation to Luling tank farm stocks, July 1, are shown in the accompanying table:

Company	Pipeline runs For June	July 1 Tank Farm Stocks	June Tank Car Shipments
Grayburg	133,484	35,000	11,452
Atlantic	644,237	27,500	637,737
Elliott Jones	22,597	500	22,597
Magnolia	155,282	1,448,787	26,626
Mutual Ppl.	262,260	11,125	261,510
National	34,200	.....	34,200
Texas	61,298	.....	61,298
Magnolia	.....	315,722 (fuel oil)	
Magnolia	.....	71,191 (distillate)	
Magnolia	.....	16,523 (Refinery crude)	
	1,313,352	1,926,348	1,155,420

Woodley's Well In Cotton Valley Making Considerable Water

By Special Correspondent

SHREVEPORT, July 29.

WOODLEY Petroleum Co.'s No. 1 Merritt, located on a 20-acre strip described as the east half of the northwest quarter of the northeast quarter of 14-21-10, which was bailed in last Monday morning, continued to pay off at the rate of 8000 barrels or more of pipe line oil per day for a time but once more the relationship between oil temperature and water proximity was proven.

The clean oil showed a temperature of 104 F. The approach of salt water was foreseen and as of this date the well had declined to about 4000 barrels of fluid of which 20 per cent was B. S. and water.

The Woodley well for a time made more oil than could be moved away by two 6x4x6 and one 10x5½x12 pumps. Its completion did not cause the excitement that might ordinarily be expected of a well of this caliber, due to the fact that it is located in proven territory and also to the expected water encroachment. The well was a good thing for the owners, however, and undoubtedly has already repaid its cost.

The Humble Oil & Refining Co.'s No. 4 Babb, located in the same section and a quarter of a mile south of the above well, was bailed in as a gasser, spraying oil. It topped the sand from five to 10 feet higher than did offsetting oil wells on the west and north.

These two wells seem to typify the structural condition which obtains on the northern edge of the Cotton Valley field. The No. 4 Babb topped the sand at a level just a few feet too high to produce oil in large quantities at first, although it may blow in later as an oil well, as several other wells have done. The Woodley well seems to have encountered the sand at just exactly the right position while a well offsetting it on the northwest, which was completed at a still lower level, failed to flow naturally.

Hopes for a northern extension to the field, never very strong, have been abandoned at the failure of Belchic & Laskey's test on the Logan land, in 2-21-10, one mile beyond the northern limit of the field.

Humble's No. 3 Babb, in Sec. 14, came in Friday night while being swabbed as a gasser spraying oil. Gas and sand cut the line, leaving the swab in the hole. Pressure then cut a hole in the casing and the well is now blowing wild. Arrangements are being made to kill the well with heavy mud.

New locations have been made by the Gulf and Fortuna companies near the Hude & Aarnes gasser, recently completed in 22-21-10, in the southern part of the field, but on the whole drilling activity is subsiding. It is believed that no revival of interest is likely to occur until the oil producing area has again been extended.

California Gasoline Output Decreases In June

Staff Special

HOUSTON, July 28.—Further increases in storage stocks of California heavy crude and tops are shown in June figures currently made available through the office of Norval White, the Pacific Coast representative of the American Petroleum Institute at San Francisco.

Total stocks increased 1,065,918 barrels in June to a level of 100,577,855 barrels, July 1. Tops increased 190,504 barrels to 14,065,497 barrels; crude heavier than 20 Be. gravity, including residuum, increased 990,753 barrels to 49,080,055 barrels; and refinable crude, that is to say that of 20 Be. gravity and lighter was drawn upon to the extent of 115,339 barrels.

As showing the division of these products held at refineries in comparison with field, pipeline and tank farm stocks, the following figures apply: held at refineries, 34,114,385 barrels compared with 33,357,754 barrels, May 31; in field, pipeline and tank farm stocks, 66,463,470 barrels compared with 66,154,183 barrels.

This accumulation in total stocks was in spite of a daily average decrease in California crude oil production in June of 12,860 barrels daily to 626,933 barrels.

California refinery statistics for June issued by the San Francisco office of the United States Bureau of Mines and compiled by C. E. Steidel show 39 refineries operating at 75.5 per cent of their indicated capacity of 566,670 barrels. They ran to stills a daily average of 428,354 barrels.

Gasoline production for the month amounted to 109,567,063 gallons, a decrease of 5,293,051 gallons under the May output. Stocks of gasoline continued to increase, the Bureau of Mines report placing the total July 1 at 276,959,482 gallons, an increase for the preceding 30 days of 11,209,848 gallons.

Kerosene stocks of 32,420,967 gallons showed a decrease of 6,006,694 gallons; gas and fuel oil stocks gained 20,143,094 gallons to 810,013,658 gallons; and lubricant stocks increased to 15,932,159 gallons.

LOS ANGELES, July 26.—E. W. Clark, executive vice-president of the Union Oil Co., of California, has just returned from a two months' vacation in the east. He took his family to the middle west, accepted delivery on a new automobile, drove it all over the New England states, and then motored back to California.

Gulf Coastal, Texas Completions, Week Ended July 26

Company	Lease—Well	Field	Depth	Prod.
Gulf Production Co.	Phoenix 23	Hull	3000	1800
Mecom Oil Co.	Mecom 4	Hull	3795	2000
Yount Lee Oil Co.	Merchant 5	Hull	3675	300
Humble Oil & Refining Co.	Hankamer 11	Hull	2000	Aband.
Rycade Oil Corp.	Kishi 4	Orange	3060	30
Humble Oil & Refining Co.	Winfree 10	Orange	2580	175
Orange Petroleum Co.	Berwick 1	Orange	3395	30
Gulf Production Co.	Peveto 7	Orange	4550	150
Gulf Production Co.	Lee Hager Fee 15	Orange	3900	3500
Humble Oil & Refining Co.	Simms Smith 58	Goose Creek	2500	100
Duester Oil Co.	Trustee 8	Ratson	775	25
Gulf Production Co.	Way 160	Ratson	1350	65
Unity Oil Co.	McFadden 8	Spindle Top	960	50
Sun Oil Co.	Johnson 2	Vinton, La.	2850	Aband.

Moffat Dome Well Tests More Than 4500 Barrels Clean Oil In 24 Hours

DENVER, July 26.
By Special Correspondent.

THE oil industry in the Rocky Mountain district has plenty of news just now to keep it interested. The most important developments started off with the bringing in of a 100,000,000-foot gasser on the Wellington dome in Colorado by the Union Oil Co. of California followed by the well catching fire. Along with this development came the news that the same company's Whitaker well on the Fort Collins structure 11 miles to the south, was showing 1,000 feet of oil in the hole at 4,300 feet and 280 feet above the sand. Next, came the test of the discovery well on the Moffat dome in northwestern Colorado which made a flow of 4,595 barrels in the first 24 hours and increased in the second period, and on the heels of this came the striking of the Wall Creek sand in two of the wildcats in northwestern Colorado with indications that two new structures will be proved within the next few weeks.

New Mexico showed up with several locations for test wells on new structures which have recently been mapped and leased along the northern boundary. Utah has a new location by the Midwest interests on the Cisco fold, the starting of new wells by the Prairie interests, and a report on a well in the southeastern corner of the state that is making 30 barrels of oil along with water on the Boundary Butte structure. Wyoming shows a further decline in Salt Creek runs and the Kevin-Sunburst field in Montana steps up to second place in output among the fields of the district.

Colorado

The first real test of the Texas-Transcontinental Oil Co. discovery well on 33-5-91 Moffat dome, 17 miles south of Craig, northwestern Colorado, which has been shut in since completion except for the taking out of oil for drilling purposes, commenced at 9 o'clock on July 22. It put 4595 barrels of pipe line oil into the tanks in the first 24 hours, or an average of 191 barrels an hour. In the second 24-hour period, it flowed 4600 barrels, or at the rate of 191.7 barrels an hour. The first period showed a slight increase over the flow when the well was shut in on March 3 at which time it made 4580 barrels in 24 hours. The second period of 24 hours again showed a slight increase over the first. There was no water with the oil and the pressure held up without any sign of decreasing. Officials of the owning companies are highly gratified with the results and there is no longer any doubt but that the field will be equal to expectations.

It was expected after drilling in of the well in January that a year would elapse before any of the oil could be marketed but a series of events enabled the operating companies to save about 9 months. The Prairie Oil & Gas Co. acquired control of the Producers & Refiners Corp., which has a large refinery at Parco, Wyo., about 100 miles to the northeast, which is in need of additional crude supplies. A deal was consumated a few weeks ago whereby the Prairie company contracted for the Moffat dome production and commenced the construction of a temporary pipe line from the field to Craig and the erection of two 55,000 and two 35,000-barrel tanks, to be followed by a test of the well. The agreement provides that if the well shows certain results on a quantity and time test that the Prairie interests will construct a pipe line outlet from the field probably to the Parco refinery.

The test now under way was made in accordance with these contracts and, from present indications, will fully come up to the requirements. The results so far show that the discovery well is producing from a real pool an especially desirable grade of light oil. So encouraging were the signs before the well was opened for the test, that the Prairie company ordered two additional tanks of 35,000 barrels capacity each and the material for these is now being rushed to Craig. The sand from which the oil is coming is estimated to be more than 100 feet thick and the behavior of the well indicates that there is little danger of water coming in from the bottom as was considered possible.

Immediately surrounding the Moffat dome is a series of other domes, most of them of larger area, which geologists have declared to be closed on all sides and upon which tests are now in progress. Five miles to the southwest is the Iles structure. The Midwest Refining Co. is drilling on 22-4-92 in its French No. 1, the Yarg Producing & Refining Co., has a well going down on 14-4-92 and the Hogan-Transcontinental-Texas companies are drilling on 16-4-92. These wells are all nearing the sand and completions may be expected within the next few weeks. One of them, the Midwest well, topped the Wall Creek sand this week at 2310 feet. It had a small showing of oil and salt water. Since this sand carries water in that district, the presence of the oil with the brine is accepted as proving that the structure is closed. The Dakota sand is expected about 350 feet under the Wall Creek. The results, so far, indicate that this structure is to become a producer.

Twelve miles to the east of the Moffat dome, the Transcontinental-Midwest-Texas companies has a test drilling on 32-4-89, in Routt county, on the Beaver Creek dome. This well, like the Iles test of the Midwest, encountered salt water in the Wall Creek at 2885 feet and is, therefore, believed to be sealed and expected to be a producer in the Dakota within the next 350 feet. Immediately west of the Iles dome, on what is called a lobe of that structure, the Standard Oil Co. of California is drilling on 22-4-93 on what it has named the Axial dome. South of these structures is the Coles dome upon which the Marland Oil Co., the Union Oil Co. of California and the Yarg Producing & Refining Co., have most of the acreage. Final surveys for locations are now being made. Twelve miles west of the Moffat dome is the Gossard dome upon which the Yarg people have made a location on SW¼ of NW¼ of 29-5-93. Marland

Completions Rocky Mountain District Week Ending July 19

WYOMING

Salt Creek

Company	Well No.	Description	Depth	Production
Wyoming Associated	5-A	30-40-78	2260	15
Wyoming Associated	18-AX	30-40-78	1954	225
Wyoming Associated	16-A	1-39-79	1775	To be shot
Wyoming Associated	34-A	14-40-79	1971	240
Midwest Oil—Wyo. Asso	33-A	36-40-79	1663	To be shot
Midwest Oil—Wyo. Asso	36-A	36-40-79	1903	To be shot
Midwest Oil	31-AS	1-39-79	1944	To be shot
Midwest Oil	6-A	34-40-79	2189	To be shot
Midwest Oil	24	27-40-79	1288	1120
Mountain and Gulf	14-A	13-40-79	2213	25
Mountain and Gulf	5-A	12-40-79	2539	To be shot
Wyoming Oil Fields	10-A	25-40-79	1553	20
Salt Creek Consolidated	24-A	31-40-78	2126	To be shot
Midwest Oil—Wyo. Asso	28-A	36-40-79	1721	1450
Kasoming Oil	3-F	19-40-78	2450	300
	Osage			
Wyoming High Test		18-46-63		20
Wyoming High Test		18-46-63		20
	Montana			
Murray Bros	Broadview Dome	18-3N-23E	2509	Dry
Kenneth Frazer	Bears Den Dome	12-35-5	3290	Aband.
Crumley & McKnight	Kevin-Sunburst	4-34-2W	1504	1000

and others also have leases here. Still farther west, about 30 miles, is the Elk Springs dome upon which the Union Oil Co. of California is drilling on 31-5-98 at 1,000 feet and expecting a completion at 2000 feet.

New Mexico

The northern part of New Mexico all the way from the Arizona to the Oklahoma line is coming in for its share of wildcatting. One of the largest deals announced since the Union Oil Co. of California leased 205,000 acres in northern Colfax county about two months ago was made public this week. The Canary Oil Leasing Co., of which J. D. Canary, discoverer of the Canary pool in the Mid-Continent field is the head, has leased 110,000 acres out of the old Tierra Amarilla Spanish land grant in Ria Arriba county, New Mexico, and Archuletta county, Colorado. The company will start 4 tests at once on as many separate structures of which 3 are on the New Mexico side and 1 in Colorado.

These structures have a north and south trend the same as those along the eastern front of the mountain range in northern Colorado. The most southerly of the four is the Elvado dome, in Rio Arriba county, a structure approximately 9 miles long and from 2 to 4 miles wide and which embraces about 15,000 acres within the closing contour. Directly to the north is the Horse Lake dome embracing 8000 to 10,000 acres. The most northerly of the three on the New Mexico side is the Burns dome comprising about 8000 acres. On the Colorado side, in Archuletta county, is the Hallowell structure embracing 7000 to 8000 acres.

The Elvado dome, the most southerly, has dips on the side averaging about 6 degrees but the structures to the north are more shallow and dip from 2 to 4 degrees. The three will be tested through the Pennsylvania series and will require drilling to 2000 to 2500 feet. The Hollowell dome, on the Colorado side, is lower geologically and the objective will be the Dakota sand expected at 1000 to 1400 feet.

On the eastern side of northern New Mexico, leasing is taking place on a large scale. The Union Oil Co. of California is drilling 5 miles south of the Colorado line on the Vermejos dome, in Colfax county, which straddles the 105th meridian. To the south, also in Colfax county, the Standard Oil Co. of California is drilling.

Utah

The Utah Oil Refining Co. has made a location for the test it is to drill on the Cisco fold about 35 miles due west of the Colorado boundary on the Denver & Rio Grande Western railroad on the NE¼ of 25-208-21E, northwest of the town of Cisco. Actual drilling has been delayed for several months on account of delays in issuing the prospecting permits at Washington. The Midwest Refining Co. will be in charge of the drilling and it is understood the associated interests have more than 10,000 acres blocked up. The test will be to the Dakota sand and is not expected to be very deep. Reports from Utah last week stated that the Midwest interests paid $1,000 bonus for a lease on 160 acres of patented land within the area covered by the permits. The structure is said to be a very promising one. At Cisco are some shallow wells estimated capable of producing 15 to 25 barrels each of 33 gravity oil containing 25 per cent gasoline from depths of 550 to 750 feet. Farther west, at Thompson station, the Crescent Eagle Oil Co. has a well down around 2400 feet which is showing some oil and gas and which is believed to be on top of the objective sand.

The discovery well of the Southwest Oil Co., a subsidiary of the Midwest Oil Co., on the Boundary Butte structure, near the Arizona boundary in southeastern Utah, is still pumping 130 barrels of fluid a day of which 30 barrels is high grade crude and the remainder water. The well found the production at around 1670 feet in the Shinarump conglomerate which lies between the Dakota, the producing horizon in northwestern New Mexico, and the top of the Pennsylvania, the objective horizon in the Utah wells. The company is desirous of saving the well, if possible, since it is the discovery, but so far all efforts to overcome the water trouble which originates in a cavity encountered by the drill, have been unsuccessful. It will be pumped a while longer and if there is no change it is probable the hole will be plugged and another well put down.

The Prairie Oil & Gas interests are starting some more wells in the Clay Basin field in the northeast corner of Daggett county, northeastern Utah. The Producers & Refiners, Prairie subsidiary, is drilling the pioneer well on 22-3-24 and is down 1225 feet. It is said to have encountered considerable gas at 380 feet. The Kasoming Oil Co., another Prairie subsidiary, is rigged up on 27-3-24 and reports state that material is being moved for another. It is rather unusual for closely affiliated interests to drill more than one well in the same area before a discovery is made.

Wyoming

Production in the Salt Creek field continues on the downward grade with pipe line runs of 88,835 barrels a day for the week ending July 12, a decrease of 3250 barrels as compared to the prior week and a decline of more than 40,000 barrels a day since the first of the year. There were 15 completions for the week of which 8 had an initial production of 3395 barrels and 7 have not been tested awaiting a shot. Two of the wells are above recent averages. One of these came in for 1450 barrels this being a joint well of the Midwest Oil and Wyoming Associated on the state lease on 36-40-79 and the other, a Midwest Oil well on 27-40-79, with an initial production of 1120 barrels.

The Midwest Refining Co. wildcat on the Jordan structure, 20-9-69, in Laramie county, northwest of Cheyenne, drilled into a sand at 630 feet which developed a flow of 8000 barrels of sulphur water. This well was started as one of a series for formation tests to work out the geology of the structure and appeared to be so favorably located that it was decided to continue it on down as a test of the Dakota sand expected at around 1500 feet. The water will be shut off so drilling may continue.

The Hatfield Oil Co. is drilling at 3445 feet in its No. 2 well on the Eight Mile structure north of Rawlins in Carbon county. It is headed to the Dakota for an oil test at 4000 feet. No. 1, located on 2-19-88, came in more than a year ago as a big gasser in the Wall Creek sands but there was no oil. A deal was made with the Producers & Refiners Corp. to pipe the gas to Parco for use under the refinery boilers and the gas is now being used for that purpose. The second well also found gas in the Wall Creek which was shut off to make a deep test. After passing through the sands, the hole went into a broken formation which has been showing indications of oil and the outcome will be watched with considerable interest.

Montana

The Kevin-Sunburst field in northern Montana, near the Canadian border, is showing the effects of the recent completions and is now running about 7500 barrels a day which is the largest for any field in the Rocky Mountain district outside of Salt Creek. Actual runs for the last half of June were 61,950 barrels. The well which added to the increase was the Shoshoni Oil Co. Storm No. 4 on 4-34-2W which came in with a flush production of 2500 barrels. On this same section Crumley & McKnight have completed their No. 2 Corey in the Eellis sand at 1504 feet with an initial production of 15,000 barrels.

The Sunburst field is to have a new refinery to be constructed by Louis B. O'Neil and associates. It will have a capacity of 2500 barrels a day and will merely top the crude. The toppings will be sold to the Imperial Oil, Ltd., for its refinery at Calgary and the fuel oil will go to the Great Northern railroad.

The Midwest Refining Co. is about ready to make a test of its Heop No. 1 on the Big Lake structure, 30 miles northwest of Billings which came in at around 3800 feet about two months ago. Tanks have been installed and lines laid. The well was estimated good for not less than 500 barrels and probably more at the time it was shut in and opened a new field.

LOS ANGELES, July 29.—The General Petroleum Corp. has just closed a contract with the J. R. Kelley Co. for the construction of a pipe line to reach from the Wilmington pumping station of the G. P., to various oil well supply manufacturing plants in the Torrance district. The line will be used to convey a supply of residuum to these plants for fuel purposes. It will be a 6-inch line, four and one-half miles long.

Deepest Hole In Ohio Is Also Deepest 8-Inch; Excellent Drilling Job

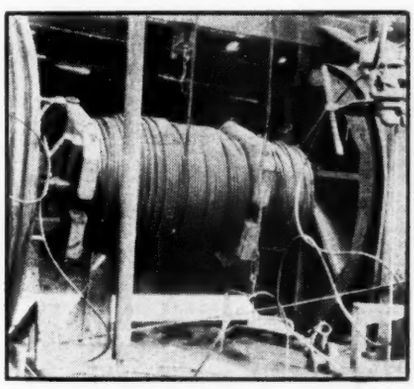
By Lawrence E. Smith

STAFF REPRESENTATIVE

CLEVELAND, O., July 28. ONLY a small quantity of oil and a show of gas at the bottom of the Clinton sand was the reward of a year's work and a large expenditure on the part of the East Ohio Gas Co. which recently completed the deepest well in Ohio.

It probably is the deepest large diameter hole in the country anywhere. At 5740 feet it was 8-inch and at that point was reduced to 6-inch, being finished at 5908 feet as a 6-inch hole. Just three days less than a full year was occupied from starting to completion dates. Not all the time was straight drilling, as certain delays occurred, such as the time spent in changing from gas drilling engine to steam. Very little time was lost because of accident, however. A bailer was lost something over a mile down, but was soon recovered.

The avoidance of accidents, according to East Ohio officials, was due entirely to the efficiency of the men who did the work. They were given the best of equipment and, being men of long experience in drilling Ohio wells, knew what to do with it. There was no particular hurry about getting the job done, as the test was as thoroughly wildcat as could be and while the chief aim, of course, was to get production, the geological information expected from the test was considered sufficiently valuable to warrant the most careful drilling.



Showing bull wheels with triple tug wheel. The brake wheel was double, although only half of it is shown

Much credit is given to W. H. Cummings, field superintendent, and to Drillers Lydeck and Hamilton for the successful completion of the hole.

The well was located on the J. K. McCullough farm in Sec. 10, Freeport township, Harrison county, and was 30 miles from Clinton sand production. (The Clinton is the chief oil and gas horizon of central Ohio.) Drilling was started June 21, 1923 and stopped June 18, 1924.

The hole was drilled with 80-foot derrick, doubled throughout. Twice the amount of lumber ordinarily used in a standard rig was put into it. The hole was started as 18-inch and 287 feet of 12½ drive pipe was set. Twelve-inch hole was drilled through the Big Injun sand and 1046 feet of 10-inch was run. The 10-inch hole was carried 405 feet below the Berea sand and 1620 feet of 8¼-inch casing was used. The rest of the hole, or 4288 feet, was open and was carried to 5740 feet as 8-inch. The succession of firm limestones from that point where the 8¼-inch was set made it possible to drill it "raw" and nearly all water had been shut off with the last string.

Good Gas Engine Record

The well was started with gas engine, this being a four-cylinder 140 h.p. The gas engine was replaced at 4500 feet with a 14 x 14 steam engine and two 40 h.p. boilers. At this depth a triple tug bull wheel and a double 12-inch brake wheel were brought into service. The load of the tools and wire line at 4500 feet was getting so heavy that the gas engine was having difficulty in handling it, but was an excellent performance for this type engine.

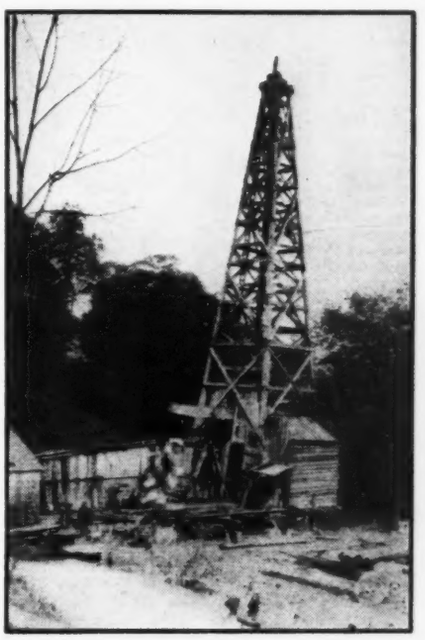
The belt used was 14-inch eight-ply, 120 feet long. A 1-inch wire line was used in drilling the last 3000 feet. In all, 22,500 feet of wire drilling line was worn out in the job and 21,000 feet of sand line was also rendered unfit for further service. Besides this, 1300 feet of manila cable, used as "cracker" on the end of the wire line, was required.

Five 30-inch crown pullies were worn out in the year of drilling. Standard 5-inch rig irons were used. The walking beam was standard size, but was fitted with extra-heavy stirrup. The wrist pin was standard 2¾-inch.

The area where the well was located was structurally favorable, so far as the surface was concerned, but in Ohio surface structure is not a reliable guide to the deep sands. The McCullough well was on the highest part of a pronounced anticline, having a reverse dip of 150 feet in a mile and a half. It was impossible to say whether a structural feature showing this amount of dip at the surface would carry down to the Clinton, but the reversal was considered sufficient to more than overcome the thickening of the Devonian shales so that at least a broad, terrace-like structure could be expected in the Clinton.

The only available data for sub-surface calculations in this part of Ohio were the Reamer well in Columbiana county, the Bay well in eastern Muskingum county and the wells near Bolivar, Tuscarawas county. A very heavy Clinton was expected and the possibility of production was thought to depend upon the nature of the sand.

Little information was available on the rate of thickening of the Devonian shales east of Muskingum county. It was estimated that the Bedford and



McCullough wildcat rig, showing double re-enforcing

Ohio shales dip 18 feet and thicken 32 feet per mile southeast through eastern Guernsey and western Harrison counties. This puts the top of the Big Lime 50 feet lower every mile down the normal dip. It was estimated that there would be 1500 feet of the Big Lime and that the Clinton would be about 5600 feet deep.

Greater Thickening Than Expected

The log shows that this thickening, instead of being 32 feet, was nearer 50 feet to the mile. The Clinton was about 200 feet lower than was expected.

Even since the well has been completed, it is difficult to say whether the structure carried down, as there is nothing to compare depths with. A line between the Bay and Reamer wells previously referred to, is at about right angles to the normal direction of dip and comes 10 miles up the normal dip from the McCullough well. The bottom of the Big Lime is 500 feet deeper in the McCullough well than it would be on

Completions North-Central Texas District Week Ending July 26

WICHITA FALLS DISTRICT

Wichita County

Company	Well	Depth	Initial Prod
Texhoma O. & R. Co.	1-A Rexford	1566	Dry, Aband.
Magnolia Pet. Co.	40 Staley-Beach	1030	35
Bower, Bass & Dillard	4 Peeler	1660	275
Apple & Brandeberry	9 Jennings A	1892	Dry, Aband.
Bailey & Coleman	1 Roller	1550	Dry, Aband.
Clifford Mooers	3 Kemp & Allen	190	7
Electra Gulf Oil Co.	6 Murray	1765	265
Section 2 Oil Co.	2 Burnett et al.	1593	45
Burnett Ranch Oil Co.	3 Burnett et al.	1570	125
Kentucky Oil Corp.	1 Burnett et al.	1680	Dry, Aband.
Petroleum Producers	2 Maer	1660	165
W. M. Moore	1 Burnett et al.	1580	20
Texhoma O. & R. Co.	6 Burnett et al B	1580	100
Texhoma O. & R. Co.	7 Burnett et al B	1580	200
Texhoma O. & R. Co.	8 Burnett et al B	1585	120
Texhoma & J. J. Perkins	1 Burnett et al	1965	Dry, Aband.
Dr. C. W. Wallace	2 Fassett No. 2	470	Dry, Aband.
Straus & Allen	1 Kemp & Allen 2	1860	Dry, Aband.
Stacey & Greben	1 Burnett et al B	1980	Dry, Aband.
United Central Oil Corp.	7 McCarty	1675	385

Archer County

Bridwell & Heydrick	7 Wilson Blk 8	1570	170
Carey et al.	3 Wilson	665	Aband.
Camp O. & G. Co.	2 Wilson-C	1605	125
C. Andrade et al.	1 Pease	1610	Dry, Aband.
Franklin et al.	11 Parrish	1595	150
Carey et al.	4 Wilson	1630	25
Hill et al.	1 Wilson	1550	Dry, Aband.
Humphries et al.	3 White	1640	Dry, Aband.
Mahlstedt-Mook	2 Wilson	1605	85
Kimbrough & Miller	3 Perkins et al	1795	Dry, Aband.
Kimbrough & Miller	4 Perkins et al	1065	Dry, Aband.
Prairie O. & G. Co.	9 Wilson-E	1380	65
Simms Oil Co.	1 Nichols	1608	45
Norton et al.	2 Pease	1440	25
Maer & Staniforth	1 Curry	1900	Dry, Aband.
Magnolia Petroleum Co.	1 Llewellyn	1405	90
Andrade et al.	1 Coffield	1610	Dry, Aband.
Sunshine State O. & R. Co.	1 Key	1400	Junk. Aband.
Shamrock Oil Co.	2 Goldsmith	1340	100
Shamrock Oil Co.	3 Goldsmith	1330	100
Shamrock Oil Co.	3 Richardson	1345	100
Shamrock Oil Co.	8 Richardson	1340	80
Shamrock Oil Co.	7 Richardson-B	1345	80
Shamrock Oil Co.	7 Harbison	1335	60
Shamrock Oil Co.	2 Campbell Bank	1335	120
Mahlstedt-Mook Oil Co.	1 Anderson	1660	Dry, Aband.

Clay County

Company	Well	Depth	Initial Prod
J. T. Cumley et al.	1 Stines	1767	200

GENERAL RANGER TERRITORY

Young County

Hinson et al.	1 McMillan	3610	Dry, Aband.
Smith & Walling	1 Benson	990	Dry, Aband.

Stephens County

Critten & Lacey	5 Cobb	3230	1100
Walker, Samuel & Steward	1 Fee	3270	325
Walker, Samuel & Steward	2 Fee	3210	375
Walker et al.	1 Newman	2210	Dry, Aband.
Texas Co.	10 Keathly	2410	40
Scott & Bateman	1 Davis	3175	30
Pearson & Brahaney	2 Williams	2070	40

Eastland County

Humble O. & R. Co.	3 Sneed	1300	Dry, Aband.

Brown County

Gillman et al.	4 Newton	1250	125

Commanche County

Kirk & Brewer	1 Slone	2685	20

Callahan County

Dutton et al.	4 Cathey	775	Dry, Aband.

MARATHON FOLD

Reagan County

Big Lake Oil Co.	8 University	3070	80
Big Lake Oil Co.	10 University	2960	1550

Scurry County

I. B. Humphreys et al.	1 H. P. Welborn	3490	45

PANHANDLE

Hemp Hill County

Piney Oil & Gas Co.	1 Hopkins	3500	Dry, Aband.

POWELL

Davis & Speer	2 Boyd	1025	40
Kirby Pet. Co.	5 McKie	2930	85
Simms Oil Co.	14 Rose	2965	310

RICHLAND

Atlantic O. P. Co.	1 Swink	2970	1000
Boyd Oil Co.	7 Webb	2965	260
C. A. Tucker	2 Davis	2967	700

Completions In North Louisiana And Arkansas Week Ended July 24

LOUISIANA

Cotton Valley—Webster Parish

Company	Well	Location	Depth	Yield
Woodley Petroleum Co.	Merritt No. 1	14-21-10	2552	8000

Bossier Parish—Bellevue

Humble O. & R. Co.	B. & W. No. 27	15-19-11	380	15
Standard Oil Co.	B. & W. No. 13	10-19-11	405	10

Ouachita Parish

Cosmos Carbon Co.	Fee No. 1	6-19-5E	2166	35 m. gas
Southern Carbon Co.	Fee No. 31	21-19-5E	2233	15 m. gas
Standard Carbon Co.	Perry No. 1	8-19-5E	2212	5 m. gas

ARKANSAS

Stephens

Magnolia Pet. Co.	Rhinehart A-1	36-15-20	2170	35
Ohio Oil Co.	Hall A-1	31-15-19	2165	30

Smackover

Gulf Refining Co.	Hedgewood No. 2	13-16-16	2105	80
Gulf Refining Co.	Hardy Murphy No. 11	4-16-15	2005	40
Anderson et al.	Anderson No. 4	26-15-17	2372	50

Company	Well	Location	Depth	Yield
Arkansas Drilling Co.	Reynolds No. 3	24-15-17	2290	60
Lee, trustee	Pope No. 1	26-15-17	2360	60
Palmetto Pet. Co.	Reynolds No. 4	25-15-17	2300	75
Staves et al.	Jeffers No. 2	26-15-17	2325	50
Sun Co.	Berry No. 4	24-15-17	2301	45
Leon et al.	Patton No. 2	32-15-16	2255	35
Phillips Pet. Co.	Hearnsberger No. 5	33-15-15	2003	200
White et al.	Watt No. 5	30-15-16	2277	20
Caldwell et al.	Burton No. 3	25-16-16	2090	1000
Crawford & Sebastian	Giller No. 7	11-16-15	1995	50
Cross et al.	Smith No. 2	13-16-16	2105	150
Eason et al.	Hilton No. 1	24-16-16	2105	500
Eason et al.	Hilton No. 2	24-16-16	2125	480
Humble O. & R. Co.	Burton No. 3	25-16-16	2088	375
Kinnebrew et al.	Williams No. 3	5-16-15	1990	150
Pure Oil Co.	Berry No. 5	20-16-15	2090	35
Pure Oil Co.	M. Hays No. 3	21-16-15	2050	200
Riggs Drilling Co.	Rice B-1	6-16-16	2270	125
Staves et al.	Moore No. 2	25-16-16	2065	500
Texas Oil Co.	Hedgewood No. 5	24-16-16	2114	450
Unity Oil Co.	Burton No. 1	23-16-16	2035	75
Magnolia Pet. Co.	W. H. Smith No. 1	2-16-17	3550	dry aband.

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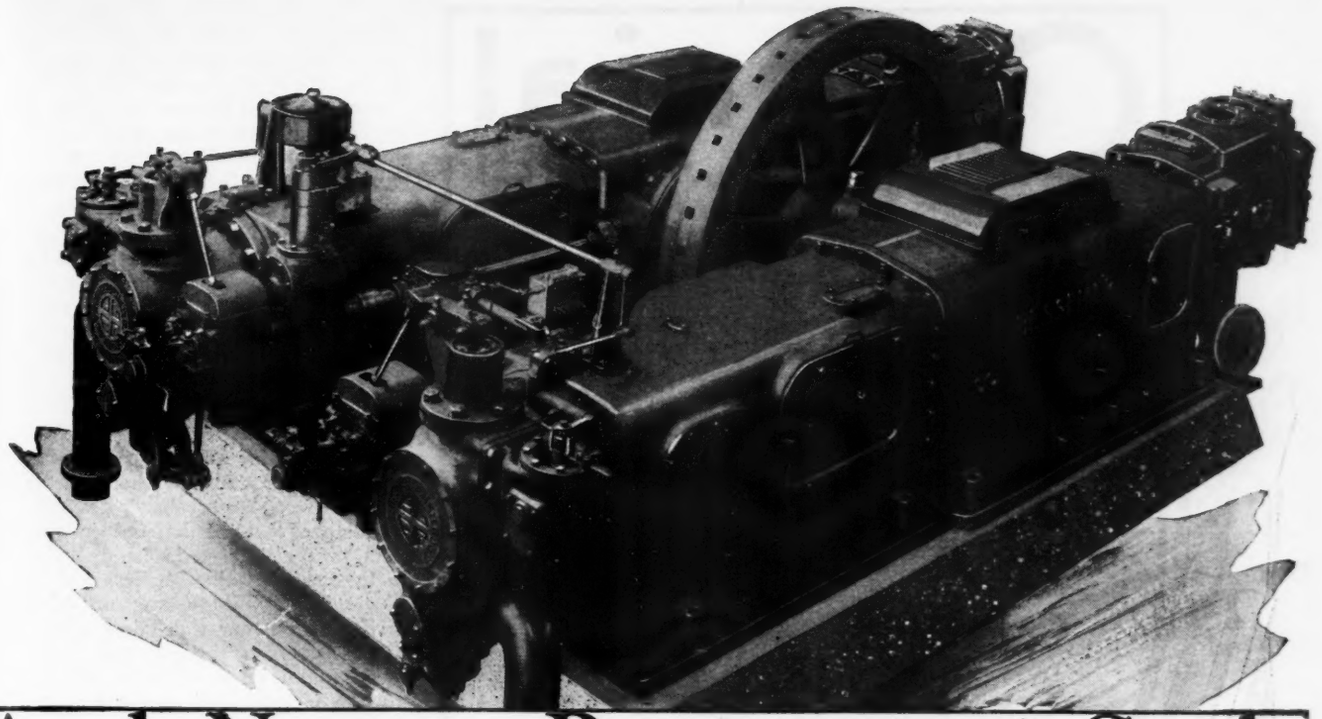
Proration is Ended

SHREVEPORT, July 28.—Announcement was made late yesterday by the Shreveport-El Dorado Pipe Line Co. that it would immediately abandon proration of oil runs through its lines in the Arkansas fields. Better conditions in the refinery markets was given as the reason for the cessation of proration. The Shreveport-El Dorado was the only company which had resorted to proration.

Houston Oil Scout Dies

SHREVEPORT, July 28.—Jos. T. Overcash, aged 25, oil scout for the Houston Oil Co., died here last Thursday after an illness of several weeks. The body was shipped to Houston, where the parents of the deceased scout reside.



And Now a Bessemer 4-Cycle Gas Engine Compressor

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Colonial Steel Company

Established 1901

Pittsburgh Boston New Haven New York Cleveland
Cincinnati Detroit Chicago St. Louis Denver
Salt Lake City Wallace, Idaho
Edw. L. Soule' Co., San Francisco

—for lubes or gasoline, or anything in between

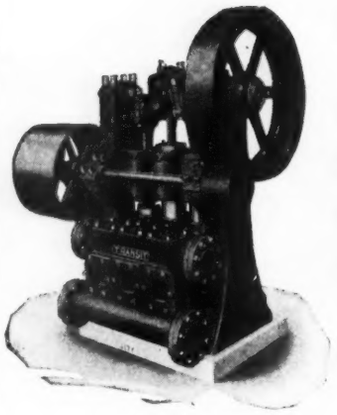


Fig. 1177

LARGE UNOBSTRUCTED FLUID PASSAGES

RIGID CONSTRUCTION

EXTREME ACCESSIBILITY

FEW PARTS

LOW CLEARANCES—MEANS HIGH SUCTION LIFT

ECONOMICAL TO INSTALL —SMALL FOUNDATION

WE call it our LOW CLEARANCE TYPE, and this feature enables this pump to handle either lubes or gasoline and anything in between.

Design — Construction — Adaptability and Price — All appeal to the prudent refiner.

Sizes — 4 x 6″ to 8 x 8″. Capacities — 68 to 480 Barrels per Hour. Working Pressure — Up to 200 lbs.

Bulletin No. 302-A — on request

NATIONAL TRANSIT PUMP & MACHINE COMPANY
OIL CITY, PA.

District Offices: New York Philadelphia Pittsburgh Denver Tulsa Cleveland Houston

the Bay-Reamer line 10 miles up the normal dip. Using 50 feet of thickening to the mile for this 10 miles, it appears that there is sufficient rise in the structure at the bottom of the Big Lime to equal a normal dip of 18 feet to the mile for 8½ miles from the Bay-Reamer line to the west side of the anticline.

The information of value that was revealed by the drill was the thickness of the various formations. A careful log and formation samples were kept and from these a reliable chapter can be written into geological records of the state.

The Clinton in the deep well had a thickness of better than 100 feet. It showed nothing at all in the top and no water was found anywhere in its extent. It was a very hard, gray to dark sandstone, so hard that only one to two feet to the tour could be drilled. The hole carried nine bailers of water through the Clinton, so something like half of each tour was taken up in bailing. An erroneous idea that water had been found in the Clinton was caused by the fact that this water was carried.

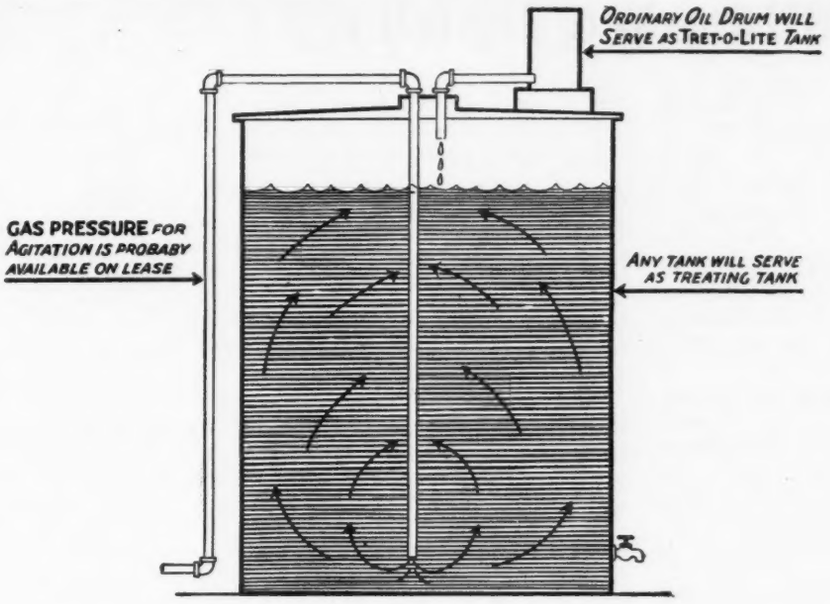
The Clinton sand samples saved are of almost flour like consistency and the change in compacting from the Clinton that produces oil and gas elsewhere is well established. Obviously, the sand was too tight and hard to serve as a reservoir.

A peculiarity of the McCullough well is the grade of oil found in the bottom of the Clinton. It is green, of 42.2 gravity paraffin base, and of about the viscosity of vaseline. It is strikingly different from the usual Clinton, or Corning grade, oil.

Because of the newness of the territory tested and the changes in formation from previously tested Ohio areas, the essential parts of the log of the well is interesting.

Record of J. K. McCullough Well No. 1 NE¼ Sec. 10, Freeport Twp., Harrison Co., Ohio. Elevation above sea, 966 feet.

Formation	From	To
Sandstone and shale	0	85
Upper Freeport Coal No. 7	85	89
Sandstones and shales	89	187
Middle Kittanning Coal No. 6	187	193
Sandstones and shale. Water at 420 ft.	193	475
Second Cow Run sand	475	good show oil
Big Injun sand, water	866	895
Berea sand (Oil 1195; water 1205)	1185	1225
Sand, smell of gas	2400	2465
Big Lime	3971	5562
Gray dolomitic lime, little gas at	5390	
Top Little Lime	5734	
Medium fine grained buff sand Top of Clinton	5804	
Gray sand	5805	
Gray sand, fine grained	5812	
Very fine grained medium gray sand	5819	
Soft dark sand	5824	
Soft dark sand	5830	
Soft dark and hard white sand	5835	
Dark gray and hard white sand	5840	
Very fine grained hard white sand	5843	
Very fine grained hard gray sand	5848	
Very fine grained hard buff sand show oil and gas	5874	
Hard light sand	5890	
Dark gray shale	5892	
Light sand and gray shale	5898-5908	
Total Depth	5908	


ORDINARY OIL DRUM WILL SERVE AS TRET-O-LITE TANK
GAS PRESSURE FOR AGITATION IS PROBABY AVAILABLE ON LEASE
ANY TANK WILL SERVE AS TREATING TANK

TRET-O-LITE INSTALLATION-COST ALMOST NOTHING

Any Practical Arrangement for Mixing

With almost *NO* initial outlay, you can start recovering *ALL* the oil from your cut oil—with TRET-O-LITE.

The above treating plant is constructed with any tank, a common oil drum, and a few fittings, valves and lengths of pipe.

If gas pressure is available on the lease, the only new expense involved is the TRET-O-LITE itself. This means you can install an experimental TRET-O-LITE plant without risking a loss.

Several different types of TRET-O-LITE plants are in use. Practically all are constructed with materials and equipment already available on the average lease, and all have for their purpose the mere mixing of TRET-O-LITE into the cut oil under suitable conditions and then allowing the oil and water to separate by gravity.

Our field experts are in the service of oil operators without obligation or expense. They will demonstrate to you on a small sample of your cut oil, how TRET-O-LITE, mixed in, will render powerless the emulsifying agents present and cause oil and water to separate completely by gravity. They will then recommend the best type of treating plant for your needs, will supervise its construction, and will instruct your men in its operation.

You can't afford not to investigate this simplest, most thorough, most rapid and most economical of all cut oil treating processes. Address Wm. S. Barnickel & Co., Webster Groves, St. Louis County, Mo.

Standard Expanding Facilities In Milwaukee District

Staff Special

MILWAUKEE, July 24

STANDARD Oil Co. of Indiana has been making extensive improvements in its marketing facilities in the Milwaukee district the past year. Recent press reports estimate that the company is spending $1,000,000 in and around Milwaukee to develop there the proportion of gallonage it wants. The figures are not confirmed, and probably could not be outside the company's treasury department, but information in the building department at Milwaukee and in the Wisconsin department at Madison give some idea of the manner in which the company is going in for business in that district.

A permit has been issued by the city of Milwaukee for the erection of an office building at Fourth and Sycamore streets, which is now the location of one of the company's finest service stations and it is one of the most elaborate stations down town. It is opposite the little city park that joins the C. M. & St. P. railroad station. The exact size and cost of this building are unknown items, but it will not be higher than 12 stories as this is the Milwaukee skyscraper limit. The real estate and foundation are said to have cost upwards of $200,000 aggregately.

Milwaukee town boosters thought Standard Oil Co. was going to build an office building on that site three years ago when the lot was purchased, excavations made and a heavy steel and concrete foundation laid. That did not happen however. The foundation was finished, the heavy beams of structural steel sticking up above the ground were covered with concrete and converted into common place looking pedestals for service station light globes. The whole ponderous foundation was covered with a concrete floor at the street level and the lot was decorated with pumps and a neat, modest service station office. This same lot is the scene of much activity today. Workmen are cracking off the concrete shells from the pedestals and baring the steel foundation. Spread out as Milwaukee is, there is probably not a better location for a building in the whole town. It is right in the midst of a group of the better hotels and office buildings, close enough together to be convenient but not close enough to be congested.

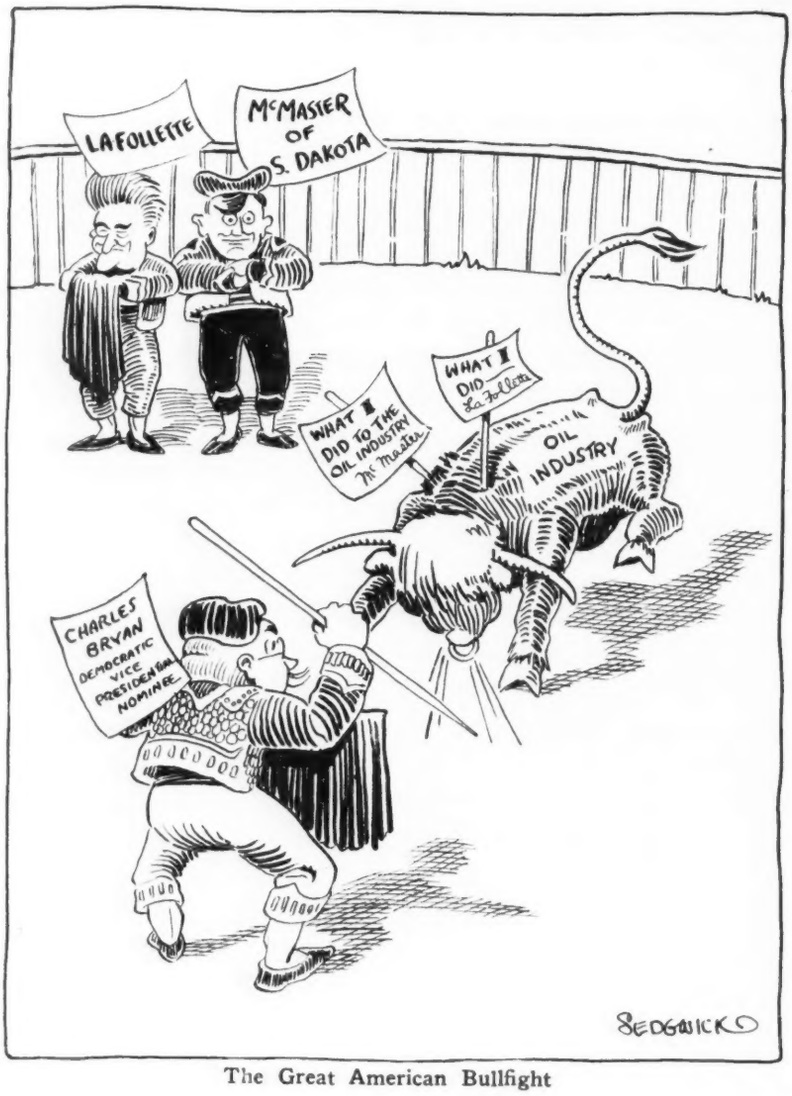
Bulk Station Expanding

Next to the renovation in progress at the service station which soon must give place to the office building, the most important piece of construction is at the bulk station. It is situated near the Alice suburban station on the C. M. & St. P. railroad, just across the street from the old bulk station of the Wadhams Oil Co. There the ground is covered with brick where walls are being razed, and there are several new storage tanks along the railroad track awaiting installation. Apparently there are enough new tanks to double the capacity of the plant.

To give some idea of the Standard Oil Co.'s share of the business in Milwaukee, consultation of the oil inspectors' records show that roughly 40 million of gallons of gasoline was burned there in 1923. Of that 40 million Standard Oil Co. handled a little less than 13 million gallons. The company's advertisement shows about 50 service stations.

There are 16 oil dealers in Milwaukee. Four of the leading Independent dealers handle aggregately 21 millions of the 40 million gallons. Those four companies have less than 60 stations all together. The current building campaign of the Standard Oil Co. will give it 73 stations, when completed it is said.

The service station building campaign has been aggressive this year. All through the better residence sections of town and down in the industrial section also, stations have been springing up every few blocks. On one choice street Standard has built two good looking service stations less than a block apart.



The Great American Bullfight

Junior Here & There

John Paul Simmerman, president of the Peerless Coal Co., Lima, O., makes a belated announcement of the arrival eight months ago of the future president of the Peerless Coal Co., a fine boy, now weighing 17 pounds.

* * *

Evelyn Louise Witschy, weighing eight pounds and born on July 4, was the cause of a celebration on that day by Roy J. Witschy, salesman with the Mutual Oil Co., at Scottsbluff, Neb.

THE EDITORS' VIEWPOINT

Get Square Deal Candidates

IN THE next few weeks candidates for the various state legislatures will be selected at primaries or conventions by the major political parties. It is well that the oil men know the taxation and economic ideas of the many aspirants and give their support to those favoring a square deal for business and less political interference with business.

A majority of the state legislature will convene early next year and there is every probability that excise taxes on gasoline again will receive considerable attention. Many oil men believe that a reasonable tax, the proceeds of which are applied exclusively to the construction and maintenance of good roads, is not objectionable because good roads result in increased gasoline gallonage especially in the usually dull winter months.

But to levy an excise tax on gasoline and apply the proceeds of the tax for purposes from which the industry cannot derive any benefit, is manifestly unfair. Several such instances are now in force. In Pennsylvania only one fourth of the proceeds of the tax of 2 cents a gallon on gasoline is applied directly to good roads. The remainder of the money goes into the state's general fund. No part of the North Dakota receipts goes toward road work. Montana takes 40 per cent of its gasoline tax receipts for general purposes, South Carolina 66⅔ per cent, Arizona 50 per cent, Georgia 33⅓ per cent and Texas 25 per cent.

The Georgia case shows what the politicians can do. The state owns a railroad from Chattanooga, Tenn., to Atlanta for which it receives $45,000 a month rental. Several years ago the state legislature over-appropriated the state income. To make up the deficit notes were issued against the future income from the railroad. One third of the gasoline tax receipts is now being devoted to retirement of these notes. After these notes are retired that third of the tax proceeds will be diverted to road purposes but it is impossible to see what benefits, direct or indirect, the oil men of Georgia are reaping from the discount of the railroad rental.

It is up to the oil men in every state to see that the candidates the major parties put up for election to the legislature haven't the turn of mind that would permit them to tack a lot of extraneous taxes on the oil industry once they are put in office. It is well to start work for a square deal in the pre-convention and pre-primary days; the pre-election campaign will then be easier.—R. B. S.

An Idea Worth Copying

THE Association of Natural Gasoline Manufacturers has achieved that which has been a somewhat visionary idea for years. The second of its meetings of gasoline plant workers, in the Drumright district, was every bit as successful as the first, in the Tonkawa field, according to all reports.

Various plans have been drawn in years past for setting up organizations of field men. Once the Institute of Mining and Metallurgical Engineers launched the plan of organizing local sections throughout the country and inviting in the various classes of skilled workmen, regardless of degree of scholastic training, rightly believing that there are hundreds of men who may not be able to write a scientific paper but know how to do a certain job well. This plan was abandoned.

The failure of other moves of this kind seems to have been due to the attempt to establish a central location, like Tulsa, and hold the meetings there. The natural gasoline association went into the field with the meeting and made it convenient for the men to attend.

The sessions are not devoted to lectures. Nobody is called in to inform the gathering on the laws of supply and demand, the market outlook or the statistical position of natural gasoline. These are executive matters and the field man is interested chiefly in how to do his own job better.

Other associations should use this idea of field meetings. The Mid-Continent Oil & Gas Association could strengthen its contact with field men greatly by inviting in the lease employes to convenient points for informal discussion of their work. The value of the plan has been thoroughly proven.—L. E. S.

Why A Tank Wagon Market Now?

WHY a tank wagon market, particularly as a basis for fixing prices to various classes of the consuming trade? If there is one institution more than another that the oil marketing business has outgrown it is the tank wagon market as a price to the consumer. A great many of the public's misunderstandings about gasoline prices come through the incongruities arising because of the industry's clinging to this basis for its price structure.

For example, on what grounds can a tank wagon driver or a station agent, or a company head for that matter, defend a service station price of so much in town, and a price to the consumer 2 or 3 cents less in the country, where the tank truck has to haul the gasoline anywhere up to 15 miles and in addition carry it from the road to a farmer's tank in a shed? Why a price of so much to a direct consumer, even though he uses large quantities, and a price a cent higher or so to a garage across the street that has to resell the product?

Some men in the oil industry now, were doing business when the tank wagon market was virtually the retail price. The tank wagon would deliver kerosene to you in gallon cans, and gasoline when the demand for that came into existence, in amounts from five gallons up. Now the tank truck largely performs a delivery, not a sales service. It carries to various classes of trade, the ultimate consumer, the garage and service station, large industrial users of gasoline, municipal storage depots, public utilities and so on. Each one of them is entitled to a price in relationship to the prices quoted other classes. In fact most companies recognize this variance in prices, and the making of the price in the individual sale is not left to the tank truck or wagon driver.

The present unsettled condition of the tank wagon markets over the country is due in part to the difficulty of defining now for all companies and all districts just what the tank wagon market is. It covers different classes of deliveries in different territories. It is subject to different interpretation.

As a basis for various price relationships to the marketing industry this published retail price seems the thing to work from. The price to different classes of buyers from the oil marketing company could be expressed in differentials of 1 cent, 2 cents or 3 cents a gallon under the station retail price, or whatever the case might be. Country deliveries in small lots should be as much as the service station price in town, perhaps more, certainly not less.—V. B. G.

No. 114

"The King is dead — long live the King!"

This is the old time salutation that arose from his subjects when news of the King's death reached them.

This quaint phrase meant that the throne was never without an occupant. In the same breath that the departed ruler was mourned, the new King was acclaimed.

May we do likewise with the new member of our famous old quartet of Cylinder Stocks—**No. 114.** Because it is really not a fifth member—it takes the place of our "FFM", well known to the jobbers of America for over 20 years.

No. 114 more nearly meets the growing demand of the trade for a lighter base oil for compounding Light Medium and Heavy Motor Oils.

It is a highly filtered, low cold test, bright stock manufactured from Pennsylvania long residuum. While only a year old it has joined the ranks of popularity with Palo, HM and LM.

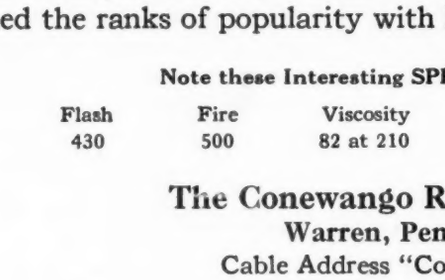
Guaranteed 100% PURE PENNSYLVANIA OIL

PERMIT NO. 4

Note these Interesting SPECIFICATIONS

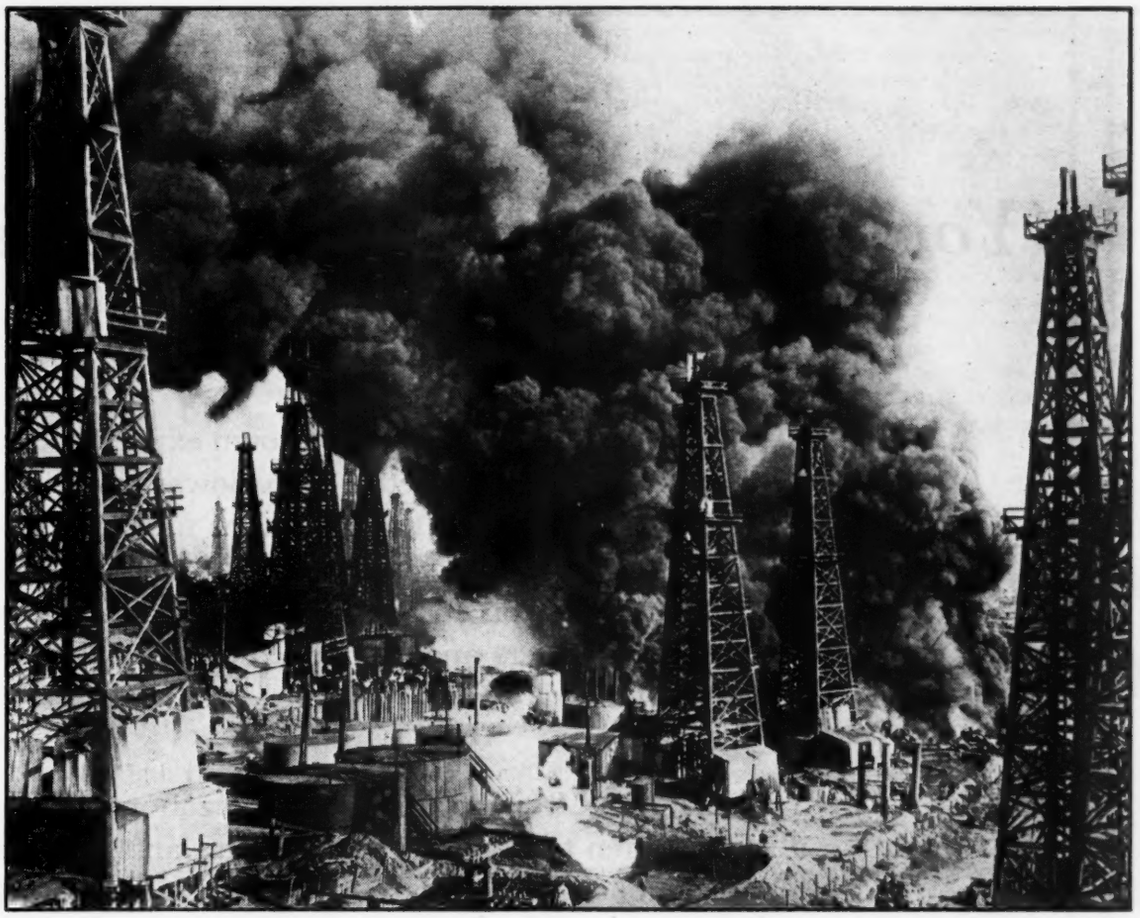
Flash	Fire	Viscosity	Gravity	Pour
430	500	82 at 210	282	25/30

The Conewango Refining Co.
Warren, Penna.
Cable Address "Conewango"



QUALITY OIL HEADQUARTERS

Derricks And Oil Tanks Threatened In Blaze



Despite the close proximity of derricks, tanks and buildings the fire in the Signal Hill district of the Long Beach field, California, was confined to four derricks and a few storage tanks.

Examiner Rules Against Western Petroleum Rate Complaint

WASHINGTON, July 26. — The Western Petroleum Refiners Association will not obtain a revision of the freight rates from the territory of its members into New Mexico and Arizona, unless the Interstate Commerce Commission upsets the recommendations of Arthur R. Mackley, its attorney-examiner who took the testimony in the formal complaint, No. 13561, Western Petroleum Refiners Association vs. Chicago, Burlington & Quincy et al.

He has recommended the dismissal of that complaint on a finding that the challenged rates on petroleum and its products are not unreasonable nor unduly preferential of refiners in other parts of the country, as alleged.

At the hearing, Mackley said, the allegation of undue preference was restricted to competing refineries in California and Wyoming, and to an improper grading of the origin and destination points here in issue. The Associated Oil Co., General Petroleum Co., Standard Oil Co. (California) and the Union Oil Co. of California intervened in opposition to the complaint. The corporation commission of Oklahoma intervened in behalf of the complaint.

The points of origin, Mackley said, were in the so-called Mid-Continent field and the Burkburnett and Ranger fields in northern Texas. In his discussion he referred to the entire territory of origin as the Mid-Continent field.

Considering rates on refined oils first, the complainant called attention to what it said were the numerous inconsistencies in the grading of origin and destination rates, such as rates to Albuquerque of 94.5-cents from Cushing and 113.5-cents from Tulsa, nearby.

The complainant's evidence, the examiner said, purporting to show unreasonableness, consisted of comparisons of these rates with rates for similar mileages in other territories, particularly from western and southern points to destinations east of the Mississippi river. Thus, the complainant compared rates from Eldorado, Kan., to New Mexico destinations ranging from 81 cents to $1.10 for 537 to 954 miles, with rates from Casper, Wyo., to Iowa and Nebraska, ranging from 36 to 45 cents for 482 to 958 miles.

As a proposed correction of the alleged maladjustment, complainant suggested division of the origin territory into three groups—group 1 embracing central Texas, group 2 central Oklahoma, and group 3 north Texas, including both the Burkburnett and Ranger districts, and the destination territory into six groups.

Group 1 of destination territory would embrace the northeastern part of New Mexico; group 2 the southeastern quarter; group 3 the western half; group 4 the southeast quarter of Arizona; group 5 the northeastern quarter, and group 6 the western half. It would then select from the origin groups 15 points in group 1, 18 in 2 and 15 in 3; and from the destination groups 60 points in 1, 16 each in Nos. 2, 3 and 4, 5 in group 5, and 18 in 6, and compute average mileages from each of the three origin groups to each of the six destination groups. For the average mileages thus obtained it proposed rates from and to the respective groups on a mileage basis, to be arrived at in this way: For class I carriers of the southwestern region for the first 11 months of 1922, the average haul as shown by the commission's report was 195.4 miles, and the average earnings per loaded car mile were 29.96 cents. These were increased 50 per cent to 44.994 cents. For 500

"You'll Do Better With a Bowser"

BOWSER ESTABLISHED 1885

Just as you'll do better with your own experience to guide you, so you'll do better with Bowser's experience to help make your filling stations more profitable. Our engineers have worked with those of America's largest oil companies—and with some of the smallest jobbers and garages, too.

This first-hand training fits our organization of over 400 field men to help you locate, plan and operate filling stations that will pay from the very first day —for we already know how to get a station thoroughly advertised, even before it is open.

Bowser has never had such a volume of business as it has enjoyed this summer and yet we are prepared, because of our superior manufacturing facilities, to make immediate shipments of many models in both visible and piston type gasoline pumps and on lubricating outfits, although, on some models, demand still exceeds production.

S. F. BOWSER & COMPANY, Inc.
Pump and Tank Headquarters
FORT WAYNE, INDIANA.
Sales and Service Offices and Representatives Everywhere

HOW TO SELL MORE GAS AND OIL : : : No. 4

miles the earnings of an average carload of 59,000 pounds would be $224.95, the equivalent of 38 cents per hundred weight. The latter rate, for 500 miles, was increased at the rate of 2.5 cents for each additional 100 miles, the rate of progression of the mileage scales of the Santa Fe and the St. L. S. F. between Oklahoma and Kansas to 57 cents for more than 1200 miles.

Rates made on the foregoing basis, the complainant contended, would not only represent a reasonable basis, but would eliminate many alleged inconsistencies in the grading of the present rates, and simplify interpretation of the present tariffs. In the latter connection the complainant referred to alleged confusion in the determination of rates, especially in the Countiss tariffs applicable west of Albuquerque, Deming, and El Paso, due to the application of rates to next more distant stations, or of lower combinations, in supersedence of the specifically published rates.

The complainant said that thorough conversance with the Countiss tariffs and territories of application was necessary to the confident determination of correct rates.

The railroads offered several criticisms of the proposed plan, the examiner said, one of which was that the complainant alleged direct routes were impracticable, such as the route through Pratt, Kans., where the Santa Fe and the Rock Island had no facilities for interchange. Other routes, they said, embraced four or five carriers and required the use of the same carrier twice. Still others, they said, excluded important consuming points, which would, if included, have increased the weighted average mileages.

The examiner discussed the proposal respecting fuel oil and distillate at considerable length, but said the record did not warrant any change in the rates applicable to those products of distillation.

The rates on the refined oils were discussed in connection with the alleged discrimination in favor of California and Wyoming. He said the record not only did not warrant a finding of undue preference of California and Wyoming, but the lack of evidence on the subject, was such to amount to a virtual abandonment of that issue by the complainant.

Fourth Sales Organization To Market Oil In Mexico

By Paul Wagner

STAFF REPRESENTATIVE

HOUSTON, July 25.—The entry of a fourth company into the selling branch of the petroleum industry in Mexico carries one step further a competitive situation that became tense with the opening up about a year ago of the Huasteca Petroleum Co.'s distributing operations.

Prior to the Huasteca's entry into finished oil sales within Mexico, the field had been entirely in the hands of the Pierce Oil Corp. interests and the Mexican Eagle Oil Co., Ltd., (El Aquila) the latter affiliated through stock ownership with the Royal Dutch-Shell group.

Now the direct arm of the Royal Dutch-Shell in Mexico, operating as the Compania Mexicana-Holandesia "La Corona," S. A., and otherwise identified as the La Corona Oil Co., has already opened up at Tampico and is reliably reported making plans for the extension of sales elsewhere in the republic.

When the Huasteca transformed itself from a strictly producing and refining interest to include sales in Mexico, this subsidiary of the Edward L. Doheny interests brought more or less of an innovation to the distribution of petroleum products in the Aztec republic.

Until then, the service station as it is known in the United States was virtually a stranger in Mexico. Sales were almost entirely handled through the "legalized measure" (weight and seal) system for gasoline handled in bulk, the American type station pump being looked upon askance. To a considerable extent, this condition still prevails.

With the exception of Tampico, where they had been previously in use regularly, pumps may be said to be a recent innovation in Mexico. Since Doheny's activity, however, they are now to be found in a number of the larger cities; and one 6-pump station in Mexico City, that is described as being elaborate, is the largest in the country. Another is now being installed.

Where Companies Operate

Doheny's sales activities have been extended from time to time until now the principal distributing points besides Mexico City are Pachuca, Torreon, Agua Calientes, Chihuahua City, Guadalajara, San Luis Potosi, Cuidad Victoria, Tampico, Celaya, Puebla, La Piedad, Leon, Iguala and Jalapa.

"El Aguila" distributes virtually throughout the country, from Magdalena, in the state of Sonora, southward to the Yucatan Peninsula, including Tapachula, in the state of Chiapas; its operations also extending past the southern boundary of the republic into Guatemala and British Honduras, where its activities take the corporate name of the Anglo-Mexican Oil Co.

With the exception of British Honduras and Guatemala, the Pierce Oil Corp. operates generally in about the same territory as that in which "El Aguila" distributes.

Outside of the towns where the Huasteca operates there are virtually no pumps in Mexico, the consumption elsewhere being in quantities insufficient for the companies to regard their installation as worth while.

For example, it is cited by an official of one of the distributing companies named that a typical American pump and a 1000 gallon tank would cost installed in Mexico about 1500 pesos, which is equivalent of $750, U. S. currency. The installation cost would not pay, he says, because it would be impossible to get the gallonage necessary to warrant this expenditure.

Greater Consumption Appears

Consumption of gasoline in Mexico is described as increasing the first six months of 1924 at the rate of about 10 per cent over 1923 figures. In 1923, the entire domestic consumption in Mexico of bulk gasoline was less than 80 million liters (a liter is about one quart), or not to exceed 20 million gallons. "El Aguila," in that year handled approximatey 56 per cent of the total and marketed roundly 40 million liters.

Besides this bulk material, a considerable distribution is made in Mexico of 10-gallon sales in the form of 5-gallon tins, two packed to the case. These sales are described as totalling about 28,000 cases monthly, of which "El Aguila" is credited with 15,000 to 16,000 cases. For the year, these sales total roundly 3.5 million gallons; making a total of bulk and case sales for the republic in 1923 of less than 24 million gallons.

There are practically no case sales in Mexico City. On the other hand, about 42 per cent of the entire bulk consumption is accredited to the capital city.

To consumers, the Huasteca, the Pierce and "El Aguila" companies maintain a retail price of 20 centavos a liter, with a 3 centavos lower schedule to resellers. The latter frequently cut the market, so that not only in the United States but in Mexico as well, outside competition results. In Mexico City, resellers are marketing as low as 18 centavos and 19 centavos a liter.

Since the liter represents approximately a quart and a centavo, at the prevailing rate of exchange is equivalent to ½ cent, U. S. currency, "gasolina" sells in Mexico for 40 cents, U. S. money, with 6 cents off the retail price for resale.

In the past there has been no considerable drive for competitive gallonage, the distributing companies working in more or less harmony to prevent disastrous drives against each other.

It is pointed out that there has never been any disposition on the part of any of the sales organizations to take retail prices to unduly high levels in Mexico, these interests thereby avoiding adverse legislation and stabilizing sales on what they regard as a reasonable basis for both the seller and the buyer, conditions considered.

"Be Square Products"

Pioneers in the manufacture of High Grade Uniform Quality Western Cylinder Stocks known all over the world as

Bigheart Cylinder Stocks

Bright Stock
Filtered Stock
Steam Refined Stock
Red & Pale Oils

Write, telephone or telegraph for quotations

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Barnsdall Refining Company

Successor to Bigheart Producing and Refining Co

910 S. Michigan Ave.
Chicago, Illinois

New York Kansas City
Pittsburgh Detroit
St. Louis St. Paul
Los Angeles Tulsa
Refinery: Barnsdall, Okla.

HERE AND THERE

J. C. Miller, formerly sales manager of Oklahoma Producing & Refining Co., is now associated with the Kendrick Oil Co., Tulsa. Mr. Miller, who is a lubricating engineer of several years' experience, is in charge of lubricating oils and wax sales. The Kendrick company recently closed a deal with a Kansas refiner to handle the latter's entire output, consisting mostly of zero cold test lube oils.

* * *

Ashton G. Work, of Atlantic City, agency manager of the Sun Oil Co., Philadelphia, has just returned to Atlantic City from Wildwood, N. J., where he had been engaged in putting the South Jersey Oil Co. on an operating basis. Mr. Work's duty consists of establishing gasoline and oil distributors in Pennsylvania for the Sun company and doing co-operative work with those already established.

* * *

J. E. Dyer, manager of sales of the western division, and H. W. Linneen, manager of the lubricating department of the western district, both of the Sinclair Refining Co., with offices at Kansas City, Mo., recently spent a day at Tulsa, according to S. R. Scivally, manager of the Tulsa offices of the company.

* * *

Harold F. Brown, salesmanager of the Interocean Oil Co., Baltimore, Md., refiners, reports that his company recently entered the retail end of the industry, and opened 35 filling stations the past year, which are located throughout Maryland.

* * *

C. W. Stone, vice-president of the Gilmore Oil Co., Los Angeles, accompanied by his wife, was in Tulsa recently on a combined business and pleasure trip. He was accompanied by Mrs. Stone.

* * *

H. M. Richardson, who was formerly salesman with the Puritan Oil Corp. which distributes Sinclair products, joined the Texas Co. as salesman on May 1, operating from St. Louis, Mo.

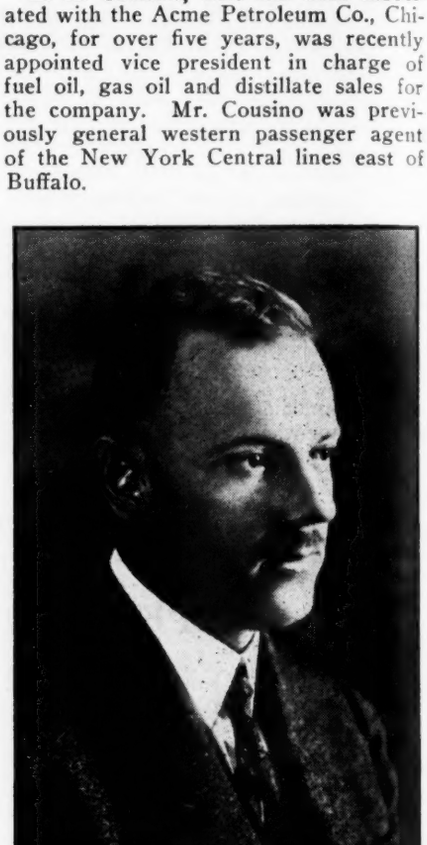
* * *

A. D. David, manager of refineries for the Mutual Oil Co., was at Sapulpa, Okla., last week on one of his periodical trips into that territory.

* * *

ONAKA, S. D., July 25.—E. M. Everson, agent for the Standard Oil Co. of Indiana here, reports that there has been much rain in his territory, and that there are prospects for a big crop in that state. The Standerd has just completed remodeling its warehouse here and has installed storage tanks.

E. A. Cousino, who has been associated with the Acme Petroleum Co., Chicago, for over five years, was recently appointed vice president in charge of fuel oil, gas oil and distillate sales for the company. Mr. Cousino was previously general western passenger agent of the New York Central lines east of Buffalo.



Alexander Deussen

Alexander Deussen, consulting geologist of Houston and director of the American Petroleum Institute, is again before the public because of the recent issuance by the United States Geological survey of his professional paper No. 126 on the geology of the Texas Coastal Plain West of the Brazos River.

Mr. Deussen's water supply paper No. 343 of the U. S. G. S., has been long recognized as one of the notable contributions to East Texas geology. It was issued about eight years ago, the work on it having been carried through prior to the work on the professional paper. The latter was delayed in issuance at Washington until recently.

Originally an instructor in geology at the University of Texas, Mr. Deussen gained a competence in Gulf Coastal salt dome production when associated with the late Neils Esperson and others in the development of properties in the old Humble field. More recently he has carried on in a consulting capacity, serving one term as president of the American Association of Petroleum Geologists and at all times taking an active part in organization affairs.

Taxes Prohibit Building Refineries Abroad

By Special Correspondent

OLEAN, N. Y. July 26.—Sometimes we think that the oil industry is pretty badly treated in this country, with high taxes and everything, but consider Europe.

E. H. Wright, works manager of the Vacuum Oil Co.'s plant here has just returned from Europe where he went to obtain sites for two Vacuum refineries abroad. The new sites were sought as a means of eliminating the high taxes and tariffs placed on oil imported into Europe from the United States. However, existing tariffs in the European companies make the establishing of refineries there prohibitive at this time, Mr. Wright found. Three taxes are placed on production as follows, he says: regular duty, surtax and turnover tax, the latter amounting to a levy of three per cent on all financial transactions.

Erection of the proposed refineries will probably be impossible until central Europe becomes more prosperous and the countries unite in a way similar to the organization of the United States and eliminate the inter-country tariffs, Mr. Wright believes.

Poland has the largest production of crude oil of any country in Europe, the best Polish oil being inferior to the lower grades of Mid-Continent crude, according to Mr. Wright. The largest refinery in Europe has only one-third the capacity of the Vacuum plant here, he states.

Mr. Wright was accompanied on the trip by W. E. Wanner, engineer of the local plant. They visited France, Hungary, Poland, Czechoslovakia, England and Germany. Upon his return to Olean, Mr. Wright was entertained at a reception by the Twenty-Year Service club of the Vacuum Oil Co.

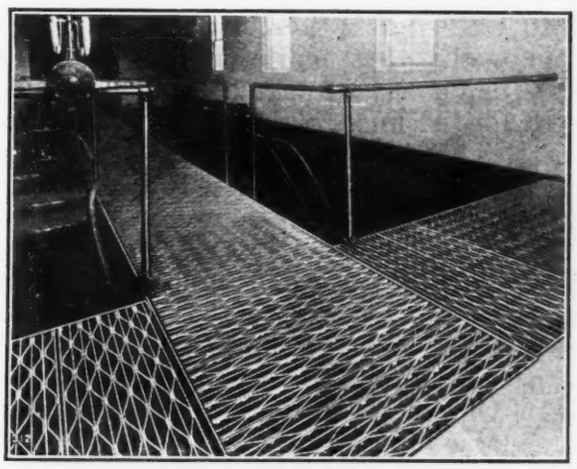
Gasoline Gains 26% In South Dakota

VERMILION, S. D.—July 25.—An increase of 5,159,564 gallons, or 26 per cent in gasoline consumption, and a gain of 555,196 gallons in kerosene consumption in South Dakota during the six months ended June, 1924, over the six months ended June, 1923, is revealed in inspection figures of the food and drug department of that state. A total of 24,344,428 gallons of gasoline and 8,512,867 gallons of kerosene was inspected in the six months ended June, 1924. Inspection figures, in gallons, for the six months of this year in South Dakota follow:

	Gasoline	Kerosene
January	4,987,000	1,285,342
February	2,603,669	1,049,498
March	2,914,744	845,530
April	3,653,351	1,252,921
May	4,995,158	2,264,796
June	5,198,827	1,807,009

THE FIREPROOF OPEN STEEL FLOORING

There's a big difference in the "feel" of *Irving Subway* underfoot—as compared with a concrete or metal plate floor or even a grating-floor of any other type. The minute you step on *Subway,* you sense its smoothness, its comfort, its non-slipping quality, its foot comfort, its underfoot safety. And that feeling of comfort and confidence is magnified, with the man who walks or works or wheels upon it, all day long. Have you ever thought of the dollars-and-cents value, to you, of providing foot comfort for your men? Catalog 4A-58 tells the story.



IRVING IRON WORKS CO.
LONG ISLAND CITY, N.Y. U.S.A.

Manufacturers also of

TRADE MARK
IRVING SAFSTEP
PATENTED REG. U.S. PAT. OFF.
ABSOLUTELY NON-SLIPPING ALWAYS

VISCOSITY?

Take viscosity in Saybolt seconds in a jiffy with the simple

VISGAGE
Price $10.00

LUBRICATING APPLIANCE MFG. CO.
5638 Lake Park Ave., Chicago, Ill.

Two Marks — what they mean to you and your customer

PROGRESSIVE jobbers and dealers everywhere know that these marks on drum or tank car indicate more than a certain degree of quality. Quality—and unequalled richness of lubricating value are there, of course. The Pennsylvania 100% mark assures that for it indicates that Ohio Valley Products are made from the highest grade oil in the world.

The Ohio Valley mark is the guarantee of service—service that includes not only the latest, most approved methods of refining Pennsylvania Crude, but which carried also those other elements so necessary to successful Oil merchandising, promptness of delivery and dependable uniformity.

A glance at the tests shown here will indicate the all-the-year-round profit possibilities of Ohio Valley Motor Oils (dewaxed long residuum). Produced in all grades, they may be used straight or blended to meet your own specifications. The complete absence of wax permits blending without heat at normal temperatures. The unusually high fire test and the extremely low cold test enable these Oils to stand up under the most severe conditions.

The long life and satisfaction your customers get from Ohio Valley Motor Oils will quickly reflect in repeat orders.

Send now for samples and quotations

NUMBER 2400	
FLASH	400-410
FIRE	470-480
VISCOSITY 210 SAY	60-65
GRAVITY	29
COLD TEST	15-20
COLOR	6

NUMBER 2430	
FLASH	425-435
FIRE	495-505
VISCOSITY 210 SAY	70-75
GRAVITY	28.5
COLD TEST	15-20
COLOR	7½

NUMBER 2450	
FLASH	450-460
FIRE	515-525
VISCOSITY 210 SAY	80-85
GRAVITY	28
COLD TEST	15-20
COLOR	N

OHIO VALLEY REFINING CO.

REFINERS OF PENNSYLVANIA CRUDE

ST. MARYS, W.VA.

Guaranteed 100% PURE PENNSYLVANIA OIL

Permit No. 1

NEW OIL STATION CONSTRUCTION

Fond du Lac, Wis.—Wadhams Oil Co. recently held a formal opening of its second filling station here, and reported good business during the day. The station, which is of the Japanese design so popular with this company, is equipped with three 5-gallon pumps, two drainpits and two air towers, according to H. A. Shiels, manager of the company here. There are also plenty of shade trees for hot days, Mr. Shiels says.

* * *

Terre Haute, Ind.—Burgess Oil Co., distributors of Marland products, just completed a bulk station here. Company has operated filling stations here for some time and expects to operate additional ones in the near future, according to Fred E. Callahan, Indiana representative of the Marland Refining Co. of Indiana.

* * *

Attica, O.—The Community Distributing Co., which has been jobbing products of the Indian Refining Co., Inc., for the past two years, has just completed a warehouse 24 by 50 feet, and added an 8000-gallon gasoline storage tank, and one 600-gallon truck tank, according to H. B. Sherman, secretary of the company.

* * *

Ropesville, Tex.,—McCain Bros. & Roberts recently disposed of their oil equipment to a concern at Memphis, Tex., which is maintaining an agency for Texhoma Oil Co., according to F. C. Jackson, proprietor of the Meadow Oil Co., Meadow, Tex.

* * *

Ashton, Ia. — Kleeman and Roben building filling station here, to handle Sinclair products, according to C. B. Boger, salesman in this territory for the Sinclair Refining Co.

* * *

Beloit, Wis.—Taylor-Sweet Oil Co., recently opened filling station here, handling products of Miller Petroleum Co. exclusively, according to J. C. Taylor, president.

* * *

Meadow, Tex.—Meadow Oil Co. has installed a service station here, according to F. C. Jackson, proprietor of the company.

* * *

Huntsville, Ala.—Standard Oil Co. of Kentucky completed filling station at cost of approximately $15,000.

* * *

Torrington, Wyo.—M. A. Eaton recently opened bulk station here, handling Texaco products.

* * *

Quincy, Ill.—Armould Oil Co. purchased property for filling station here.

Vincennes, Ind.—The Star Oil Co., recently organized, and under management of Walker France, who was formerly agent for Sinclair Refining Co. in this district, started off with a good record for volume of business done during June. The company recently completed bulk station and two filling stations here. It distributes Marland products exclusively in this territory, according to Fred E. Callahan, Indiana representative of the Marland Refining Co. of Indiana.

* * *

Crystal City, Mo.—Crystal City Fuel and Oil Co., Inc., handling Empire products, has just completed erection of a filling station and office building. It has installed tanks for storage of gasoline and kerosene. R. F. Davis, president, believes that service and quality are real drawing cards and reports his company's busines better this year than ever before, despite adverse weather conditions.

* * *

Spartansburg, S. C.—Gulf Refining Co. preparing to begin construction of its $100,000 oil and gasoline distributing station, plans for which it announced few months ago. At that time it expected to install six storage tanks, erect warehouse for oils and greases and put into service 14 trucks.

* * *

Fond du Lac, Wis.—Sinclair Refining Co. erecting bulk station and garage here. This will make seven bulk stations for this city which has population under 30,000, according to H. J. Yapp of this city.

* * *

Lemmon, S. D.—Dakota Independent Oil Co., with headquarters here, is building a bulk station and filling station at Hettinger, N. D., according to Carl Austad, sercetary and manager.

* * *

Leland, Ill.—Fox River Oil Co. has leased building here for offices and will build an extension on the rear to serve as warehouse for heavy oils.

* * *

Quanah, Tex.—Jones Bros., with headquarters here, recently built a bulk station at Lubbock, Tex.

* * *

Wisner, Neb.—A filling station, costing approximatelv $12 000, erected in this town of 1650 population, was recently opened by W. F. Reetz, owner, handling Texaco products.

* * *

Riverton, Neb.—T. R. Blank of Franklin, has leased lots here on which he will erect filling station.

* * *

Jeffersonville, Ind.—McKnight Oil Co. recently opened filling station here.

Sioux City, Ia.—W. H. Cornelius, formerly salesman with The Texas Co., has entered the jobbing end of the oil business for himself and organized The Cornelius Oil Co., of which he is manager. Mr. Cornelius is at present building a modern service station, which will be equipped with six pumps, two rest rooms, drinking fountains and hot water heating system. The station will be ready for business about Aug. 15. The company will operate two tank trucks and expects to install 30,000 gallon storage in the near future. Texaco products, including lubricants, will be handled.

* * *

Tulsa, Okla.—Royal Lubricating Co. erecting lube and compounding plant here, to be completed by Aug. 1, which will be operated by J. Mike Giltner and V. L. Davis, according to W. K. Warren, president of Warren Petroleum Co. of this city.

* * *

LaRue, O.—E. H. Lingo Co. with headquarters here, is just completing filling stations at Mt. Victory, O., with 15,000 gallon storage. It will handle lubricating oils, tires and accessories, according to Don A. Lingo, manager.

* * *

Glouster, O.—C. K. Rockhold is building brick and stucco filling station which will be completed by middle of August. Mr. Rockhold will handle Standard Oil Co. products.

* * *

Morning Sun, Ia.—George Heckenberg and R. S. Baird of the Primary Oil Co. have purchased building here to be remodeled into a filling station. Tires and batteries will be handled.

* * *

Primghar, Ia.—Harold Aldinger completing filling station here, to handle Sinclair products, according to C. B. Boger, salesman for the Sinclair Refining Co.

* * *

Berne, Ind.—Cross Service Co., of Geneva, Ind., is building bulk station here, to serve territory north of that point, according to N. D. Cross, Jr.

* * *

Warren, O.—New filling station opened here recently, by Williams & Mansell.

* * *

Jacksonville, Fla.—Filling station being erected here by Standard Oil Co. of Kentucky.

* * *

Conway, Ark.—J. G. Opitz to build filling station here.

* * *

Mason City, La.—Standard Oil Co. of Indiana to build filling station here.

Unusual Ideas Featured In Campaign To Sell Gasoline And Oil

CLEVELAND, July 24

THE Indian Refining Co. with headquarters at Lawrenceville, Ill., is putting on an intensive sales campaign this summer which, according to Col. J. H. Graham, president of the company is bringing results. The campaign seems to divide itself into three parts:

1—Selling the public on the value of Indian gasoline and Havoline motor oil through a widespread newspaper advertising and billboard campaign.

2—Making Indian gasoline and Havoline motor oil easy to get by building an increasing number of filling stations.

3—Selling Indian salesmen and dealers on products and on the selling campaign to the public through two books that the company has just brought out for distribution to the dealers and salesmen of Indian products. One of these books carries proofs of the ads to be run in the campaign. The other is devoted to selling Havoline oil.

The company has adopted a red ball in a white circle as the symbol of Indian products. The selling campaign featuring the motor oil and the gasoline, centers about a national and local advertising campaign. In the book to the salesmen it is stated "more than 55 million Havoline advertisements will appear during 1924."

The big national magazines, farmers' publications, and some 80 daily newspapers are carrying the ad. The campaign began May 1 and will continue until Sept. 1, being aimed to cover the heavy consuming season on gasoline. The newspapers are distributed over the territory where Indian products are marketed.

The gasoline advertising is based on the argument that all gasoline is not alike and is summed up in the slogan, repeated in every ad in some form or other, "Yes, there is a better gasoline." Then each ad goes on to tell the good points of Indian motor fuel.

Another basic idea that is hammered home, is the idea of exclusiveness as follows:

"Not everyone can get Indian gasoline. The big output is marketed in a few states only. It is a better gas. And you're lucky to be in the limited territory where it is sold." And each ad ties up Indian gasoline with Havoline oil.

Here is the ad that opened the big newspaper campaign May 1.

The Opening Gun

"Yes, there IS a better gas. Indian gasoline sold in this territory is made at one refinery where Havoline oil is made, at Lawrenceville, Ill., from one grade of crude piped in from the surrounding oil fields.

"Not everyone can get Indian. The big output is marketed in a few states only. It IS a better gas—uniformly better—and you're lucky to be in the limited territory where it is sold."

Another ad, in which the main display text is devoted entirely to gasoline, has the same heading which served in the opening ad of the campaign—in fact most of them have the same heading. This ad goes on to say:

"We don't try to make gasoline that is just gasoline. We believe in better gas. Not as benefactors of mankind but because it is easier to sell. So many people want it. In short, it holds trade. It pays to make better gas.

"People want it because they find it pays to use better gas.

"Try it, get a tank full today."

But in this ad, Havoline oil is not neglected. In a short subordinate text, it is hooked up to Indian gasoline as follows:

"Indian gasoline sold in this territory is made at one refinery at Lawrenceville, Ill., where Havoline oil is made, from one grade of crude piped in from the surrounding oil fields. Not everyone can get Indian," and it again drives home the thought, "You are lucky to be in the limited territory where it is sold."

And the filling station building is going steadily on in the states where the company operates.

"We are not building filling stations wholesale or anything like that," says George C. Armstrong, vice president of the company who has charge of the refinery. "When we find a site in a town that looks promising and can get it on advantageous terms, we take it and put up a station."

New Style Stations

And in building its stations the Indian is following for the most part the new idea that the driveways and space around the pumps is the selling floor and that the building is subordinate altogether. All the newer stations the company is installing are small, square of six-sided, of inexpensive but attractive construction, with much thought given to making the driveways wide and inviting and the selling space ample.

Canopies are not used on any of the new stations. Each station is adorned with one of the new Indian signs bearing the red spot in the white circle and these are lighted up at night.

For a good many years the Indian depended upon marketing its gasoline and oil mostly through curb pumps, garages and various dealers of that sort. Changing conditions within the past two years however, has brought company officers to the belief that the day is past when a big company can market its products, especially motor oil, through such channels alone and compete with other companies that have their own distributing stations.

That is when the Indian station building program started. No station is built, however, unless a careful study of the territory and the neighborhood seems to give promise that the business that can be obtained will justify it. Practically all the new stations that are being built are equipped with concrete draining pits.

One feature of the motor oil selling campaign that is bringing considerable success, according to Mr. Armstrong, is the use of the Wasson motor check. This is a device which is attached to an automobile and which registers the power its engine is generating. The car is run up on an elevated rack the rear wheels jacked up and the device attached.

When the car is run with the wheels spinning, the motor check gives a record of the power, piston slippage and blow by.

These machines have been installed at seven cities where the Indian has district offices with salesmen working out of them. When the machine is installed, the fact is announced in the daily papers of that town. In fact, national publications announced the establishment of motor check stations some time ago through Indian ads.

Don't Test Competing Oils

The motoring public is invited to take free advantage of a test by the Wasson motor check of its cars' performance. It is the policy of the company, however, not to use the testing machine on any competing oil. When a customer comes in to have his engine tested, the crankcase of his car is drained and refilled with Havoline oil.

Then the engine is started, the working of the motor check is explained to the customer and he is shown the power his engine is developing, registered on the motor check. Then his speedometer is read and he is invited to come in after he has driven the oil 100 miles. When he comes back, the motor check shows him that he has not lost any power. Perhaps his engine is doing even better than when the oil was put in.

The motor check is an expensive installation and this method of selling oil is expensive but Mr. Armstrong says that the increase in volume of business and the number of customers who become permanent Havoline users after putting their cars through the test is amply justifying its use.

The use of the motor check machine, and its showing of power developed, ties in with the Indian slogan on Havoline oil, "Oil is more than oil—it is power."

Havoline oil, Indian gasoline and the motor check are hooked up as follows in one of the company's newspaper ads:

"The same great refinery at Lawrenceville where Indian gasoline is made pro-

duces also Havoline oil, the famous power oil.

"Havoline has introduced the Wasson motor check to the automobile world, a remarkable car-testing machine that proves that oil is more than oil, it is power. You've read about it. You know that the oil that gives more power to your motor is the best lubricant. Try Havoline".

Another ad along the same line of argument says:

"You've heard of the Wasosn motor check—a remarkable car testing machine. The Indian Refining Co. was the first company to discover its value and introduce it to the public.

"You've heard of Havoline oil—the oldest branded motor oil on the market. The Indian Refining Co. has produced this fine oil for 21 years.

"The motor check has proved a vital factor about oil; that the true test of oil is power. Havoline meets that test in every car. Try it in yours."

Another ad, seeking to drive home the difference in gasoline quality, says: "Two trucks on the same route—same model—same job. But one does a lot more work than the other. Its owner knows there is a better gas."

In the book sent out to dealers and salesmen under the heading "Havoline, 1924," the dealer is thus appealed to:

"A retailer is successful in proportion to his ability to pick out a product that has the germ of leadership in it, and his ability to carry over to his customers his confidence in that selection.

"The Indian Refining Co. by virtue of its 20 years experience is in position to say that it has in Havoline a product that offers to retailers who are building substantial businesses a line of motor oils and greases that will bring out the best salesmanship and develop the kind of merchandising on which the successes of the next 10 years will be founded."

Another argument to the dealer is made in an advertisement under the heading, "What we are doing to help you sell Havoline to more people," reads:

"Havoline advertising in 1924 will sell the use and importance of oil in terms of power.

"Oil advertising needed a new idea. The car owner is fed up with bunk and blah.

"He has been asked to buy oil because of its color, its viscosity, package, wide distribution or because it is summer or winter, or because the name of his car is on a chart.

"The only reason why a man should buy oil is because it does something for his car. The only reason why he should prefer one oil against another is because it is better for his car.

"The reason why he should buy Havoline is because it gives him more power. And he can prove it in his own car.

"Heretofore, oil has been sold almost exclusively as a lubricant. Oil is oil. It remains for Havoline to sound the new note—Oil is more than oil—it is power."

It Pays to Buy
MILWAUKEE
and the Profits are Yours!

There's no question about the kind of service your MILWAUKEE Pumps will give you. You know beforehand that these same pumps are in daily use in the biggest, and busiest filling stations throughout America. You know that these operators are so thoroughly satisfied with MILWAUKEE service that *they're buying more* MILWAUKEE Pumps as their needs require.

In MILWAUKEE there is no compromise with quality—only the best materials are used. Expert pump building takes that fine raw material and makes the most dependable, easiest operating, quickest working, and most accurate measuring pump in the world. Only the most skilled craftsmen can build MILWAUKEE—only the best materials are good enough. Still, because of big production these better-investment pumps cost no more than ordinary pumps. *Write today for full details and prices.*

TYPE 58-A

—an unequalled business-getter!

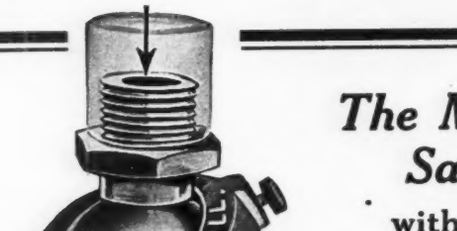
Fast working, trade attracting, enables you to serve more trade and *do it better*. Many distinctive features, including patented interlocking valves and brilliant night illumination—two advanced MILWAUKEE features. Smooth accurate service. Dependable. Long lasting. 5 and 10 gallon bowls. Fastest visible made. Motor, Hand or Air-Operated.

MILWAUKEE TANK WORKS
MILWAUKEE, WISCONSIN

Immediate Shipment from Near-You Warehouses

New York	Chicago	Pittsburgh
Cleveland	Detroit	St. Louis
Minneapolis	San Francisco	Cincinnati
Rotterdam	Paris	London

MILWAUKEE—*America's Best Pumps* **Motor, Hand or Air Operated**



The Man Who Knows Saves His Hose

with a Mars Swivel Joint

and invests One Dollar to Save Two. He saves where others waste. He knows that the MARS Swivel Joint—

Doubles the life of Gasoline Hose—

Speeds up Sales by Avoiding Delays—

Prevents Expensive Leaks—

MOVES FREELY IN ANY DIRECTION.

NO SHORT BENDS AT PUMP CONNECTION.

Constant bending up and down, forth and back will break metal (hose construction). Metal and rubber in under the cotton jacket will break up next to the pump connection where all the movement is subjected.
The investment is a profitable one. Saves hose, expense of having hose repaired, drops hose closer to pump and avoids accident of hose being carried away by the automobilist. The hose is more flexible and easier manipulated by the operator. Install a MARS on all of your pumps.

PRICE { 1" Mars Swivel Joint . . $5.00 each / 1¼" " " " . . 6.35 " } Quantity price upon request

Station Attendants: *Ask your Company to supply you with MARS Swivel Joints.*
WILL FIT ANY SIZE OR MAKE OF PUMP. *Write for full information.*

THE MARS COMPANY, Aurora, Illinois

GASOLINE

Any Gravity Any End Point

Clayton Oil & Refining Co.
Dallas, Texas

FOSTER SUPERHEATERS

Make use of waste heat to improve the economy of engines and turbines and for all oil treating operations requiring the use of high temperatures. They are producing worth-while results in many well-known refineries today. Let us show you what steam and fuel savings they can effect in *your* plant.

Write for literature

POWER SPECIALTY COMPANY

111 Broadway, New York

Boston, San Francisco, Boulder, Philadelphia, Kansas City, Detroit, Pittsburgh, Dallas, Los Angeles, Chicago, London, England

Industrial Notes

Novo Engine Co., Lansing, Mich., has recently published its technical data sheet No. 114, describing its Novo EFH air compressor outfit, its latest contribution to the industrial equipment field. It has a displacement of 170 cubic feet of free air per minute, is portable, equipped with steel or rubber tired steel wheels which are enclosed in lock-up steel housing. Two other sizes, 45 and 90 foot cubic foot displacement of the Novo compressor outfits are built.

* * *

Evans & Howard Fire Brick Co., St. Louis, is manufacturing a new high-grade brick known as "E. & H. Texafrax" at its plant at Malakoff, Tex. The company built its plant at Malakoff due to the extensive deposits of fire clay there, and for the past two years, its engineers and chemists have been developing a brick made from the mixture of these clays.

* * *

Armstrong Cork & Insulation Co., Pittsburgh, has moved its Omaha, Neb., offices into new and larger quarters at 532 Peters Trust Bldg.

* * *

The Calorizing Co., Pittsburgh, has announced a reduction of 40 per cent on previous base prices quoted by it on the calorizing of steel tubes.

Prospecting on Celebes

WASHINGTON, July 25.—The Bataafsche Petroleum Agency at Balik Pappan has recently sent out an important prospecting expedition to seek oil on the Island of Celebes. It is said that the intention of the expedition is to prospect in central Celebes, the S. W. peninsular and the Eastern and S. E. peninsular of Boni. This work will rerequire some months. It is stated further that the company purchased some first class refinery equipment last April for 2,500,000 guilders (about $1,000,000). With this in operation the amount of petroleum to be obtained from the crude mineral oil will be about doubled.

TULSA, July 24.—Lawrence M. Oles, who holds the distinction of being the sole and only geologist on the payroll of the Prairie Oil & Gas Co., now has the added distinction of being the father of an 8½-pound son, born at Springfield, Mo., the home of Mrs. Oles. The young rock hound has been named Larry Miller.

TULSA, July 24.—D. E. Kervin, better known as Gene, has left with his family for an auto trip to Denver and Casper. Mr. Kervin was formerly scout and leaser for The Texas Co. and Waite Phillips.

Factors Involved In Valuations Of Gasoline And Gas Contracts

By Alexander B. Morris

THE following notes indicate some of the many things which may be done in an effort to arrive at the correct valuation of casinghead gas and casinghead gas contracts.

During the past decade, progressive development in the manufacture of gasoline from natural gas has resulted in values reaching enormous totals being created for a substance which until recently was a worthless by-product obtained in conjunction with the production of crude oil.

As a natural sequence of events, these values have material effect on sources of income of many oil producers and have become matters of direct importance to those in this branch of the industry.

These values accrue to each of the interests, lessees, royalty owners, and manufacturers, in various ways. Some phases of the determination of these values and some data illustrative of the facts from which they were obtained will be discussed in this paper.

History of the Industry

"The early history of the manufacture of natural-gas gasoline has been published by the Bureau of Mines in previous papers on the subject.* The present practice is the result of the advance developed by a study of the needs of the industry, by improvements in machinery and equipment, and by a better understanding of the thermodynamic and other physical principles involved. A very small percentage of the plants erected have been commercial failures, and most of those which have failed lacked capital to carry them over a period of low prices for gasoline. Many of these plants are still operating, the company having been reorganized or bought up by larger corporations, and even under present market conditions, they show satisfactory net profits."

(Bureau of Mines Bulletin 151.)

*Allen, L. C., & Burrell, G. A. Tech. Paper 10, 1912, pp. 4-7.

Knowledge of Field Essential

"Before a compression plant can be properly designed to treat natural gas for any given area, a thorough study of the history of the field in general should be made, also complete testing to determine the volume and gasoline content of the gas from the area under consideration, should be made. This precaution is particularly necessary for a field in which there are no plants in operation that can be studied and used as a precedent.

"A knowledge of the history of the field is important in determining the probable life of the wells, and the decline in volume of gas produced from year to year. A plant built in California to treat 2,000,000 cubic feet per day has been able to get only half that amount because of the decline in gas production from the wells after the initial rock pressure was relieved, and new wells drilled for oil on the same lease have not thus far brought the quantity of gas up to the plant capacity. Gas from adjoining leases could not be obtained for treatment, and the plant had to be run at half capacity.

"In all gas and oil fields in the United States it is found that as the pressure in the wells decreased the gas becomes richer in gasoline content. It is doubtful, however, if the actual quantity of gasoline vapor from a given well increases," and the conclusion to be reached from an examination of the accompanying historical chart is that it does not: "but it seems to be a fact that the amount of gasoline vapor produced declines much less rapidly than either the oil or gas production from a given well or area. This has been found to be practically true of West Virginia and California fields as long as the wells produce oil either under rock pressure or vacuum. In Pennsylvania, a small compression plant is treating gas from wells that have long ceased to produce oil and are pumping with salt water under vacuums of 26 inches of mercury.

"Casinghead gas produced with high gravity oil is almost universally rich in gasoline vapors, except when the gas is produced under extremely high pressures. However the fact that an oil is of low gravity cannot always be depended on to indicate small gasoline content, as has been shown by compression plants in practice in California. As a rule, in California, casinghead gas produced with oil having a gravity of less than 22° Be. does not yield enough gasoline for profitable compression. However, in the Salt Lake Field, the oil has a gravity of 15° to 17° Be. and still the casinghead gas is commercially valuable for its gasoline content." (Bureau of Mines Bulletin 151.) Absorption plants are able to treat economically gas of much lower gasoline yield than compression plants.

Gasoline Not a Natural Resource

It must be borne in mind at all times in considering values with respect to casinghead gas for income tax purposes. that depletion deductions from gross income can only be taken because of the exhaustion of a natural resource. Gasoline is a manufactured product, not a natural resource; and therefore does not constitute a depletable asset. The natural resource in which natural gas gasoline occurs is the casinghead gas (or other natural gas) from which the gasoline is obtained by means of the manufacturing process. Where this resource is not owned by the tax payer no de-

Important Changes In Income Tax Valuation Procedure

THE following paper deals with the Income Tax aspects of casinghead gas production and gas contract value, as dealt with under the Revenue Acts of 1917, 1918 and 1921, all of which permitted the revaluation of assets paid in to a corporation as of the date paid in. Gas contracts obtained by the organizers of a gasoline company at no cost, and paid in to the new corporation as its chief asset, were thus the means of securing for the corporation an amount of invested capital far in excess of the actual cash placed in the enterprise by its organizers.

The regulations for administering the 1918 and 1921 Acts provide for the return of the capital invested in gas contracts by depletion, or rather by a method closely resembling depletion. Not only can many such companies secure the advantage of high invested capital for computing excess profits taxes under the 1917 and 1918 laws, but they can also obtain substantial deductions from gross income as depletion of the capital value of the contracts. Under the 1921 law, where invested capital is not needed for the excess profits purposes, these companies still derive a valuable advantage from the reduction of gross income by depletion.

The new Revenue Act of 1924 has made this practice impossible in the future by declaring that the value of assets paid in to a corporation shall be the same as the cost to the party from whom the corporation received them.

Although it is now too late to take advantage of these provisions for the current year or for future years, there are many gasoline companies whose tax liability for the years 1919 and 1920 has not yet been satisfactorily adjusted, and some who have paid the taxes for 1917 and 1918 under protest and who are casting about for a means to secure an equitable refund. These might find it to their advantage to investigate the possibility of applying the principles outlined below to their own particular cases. —Author.

Why Bethlehem developed an American oil engine

THE savings in fuel costs that go with the use of oil engines of the Diesel type, and the successful results that have followed the increasing use of this type of engine, forecast the wide adoption by industry of oil engine power.

For many years Bethlehem engineers have successfully designed and built large internal combustion engines. With this experience as a background, they made a complete investigation of the trend of American power plant practice, as well as an examination of existing Diesel engines.

To meet American requirements

The results demonstrated the real need of an oil engine that would be, not an adaptation of European practice, but an engine of exclusively American design—an engine that would surpass any existing oil engine in ability to meet the peculiar, severe requirements of American power users.

It was to fill that need that the Bethlehem Oil Engine was designed and built.

The Bethlehem Oil Engine is of the two-cycle type. It has mechanical features which we believe are worthy of note and which we shall be glad to explain to any interested engineer or executive. It can handle the heavy grades of fuel distillates which combine low cost with high heat content. It is very simple and compact, and is substantially built. Critical tests have repeatedly proved its high fuel economy and its ability to carry full load over long periods without faltering.

A catalog describing the Bethlehem Oil Engine more in detail will be mailed on request.

The Bethlehem Oil Engine is built in units of 2, 4, 6 and 8 cylinders. Fuel is injected into the cylinders in a highly atomized state by the aid of compressed air, ignition being caused solely by the heat of the compressed air into which the fuel is injected.

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pletion can be allowed. This is a broad general statement, and in practice is modified in many cases to such an extent as to constitute rather an academic distinction, as will appear later.

Disposing of Casinghead Gas

In different parts of the country different practices prevail for the utilization of this natural resource.

In the eastern fields gasoline plants are largely owned by the oil producers, the gasoline being extracted and sold by them, and only a small part of the casinghead gas being treated by others than the owners of the gas. This condition prevails to a somewhat less extent in the California and Wyoming fields. Where casinghead gas in the above fields is sold by the producer it is generally sold on the basis of a royalty on the gross sales of the manufacturer. As a result, much of the gas produced is not metered, the quantity of gas consumed not being an element of cost. The casinghead gas production records from these districts are therefore less complete than those from the Mid-Continent fields.

In the Mid-Continent fields, however, by far the greater part of the casinghead gas produced is sold by the producers to companies organized and equipped solely to manufacture casinghead gasoline. This gas is sold under contracts running for periods of years, obtained generally by the organizers of manufacturing companies prior to organization, though sometimes by companies already operating. As these contracts provide for a careful measurement of both the gas sold and the gasoline produced—the stipulated price to be paid depending on both elements—the records available in this field are far more complete and trustworthy than those from other localities. This system is also practiced to some extent in California but the relative amount of gas so handled is small. Lately, the royalty basis has been extended to quite wide use in the Mid-Continent, but complete records are now generally kept for their operative value.

Value for Tax Purposes

Prior to March 1, 1913, very few people appreciated the potentialities of casinghead gas as a source of revenue. There were a number of plants in the Sistersville district of West Virginia, a few in the Glenn pool and one in the Childers pool, Oklahoma. Most producers at that time, if they considered the matter at all, were only too glad to contract for the sale of their waste gas at nominal figures; and by far the greater number could not be bothered with such an innovation. Moreover, the belief prevailed, and still exists among many old-timers, that the application of a vacuum to oil wells would cause their speedy destruction. There was at that time, little if any, market for casinghead gas, and insufficient data from which to forecast the phenomenal increase in the value of gas and gasoline resulting from the unexpectedly rapid growth of the automotive industry. For these reasons, any claims by producers for more than very modest March 1, 1913, values for their casinghead gas production are to be heavily discounted. In cases where 3/1/'13 value is claimed for plants erected three or four years after that date, the probability, as of that date, that such a plant would later be erected, could be assigned only a very nominal value.

For Producer and Royalty Owner

The producer, whether lessee or operating owner, and the royalty owner have the same general rights to a valuation for casinghead gas as they have for oil or dry gas. These may be stated as follows:

Value as of 3/1/'13.

Value as of date of acquisition of stock.

Valuation on account of discovery subsequent to 3/1/'13, for 1918 and later years.

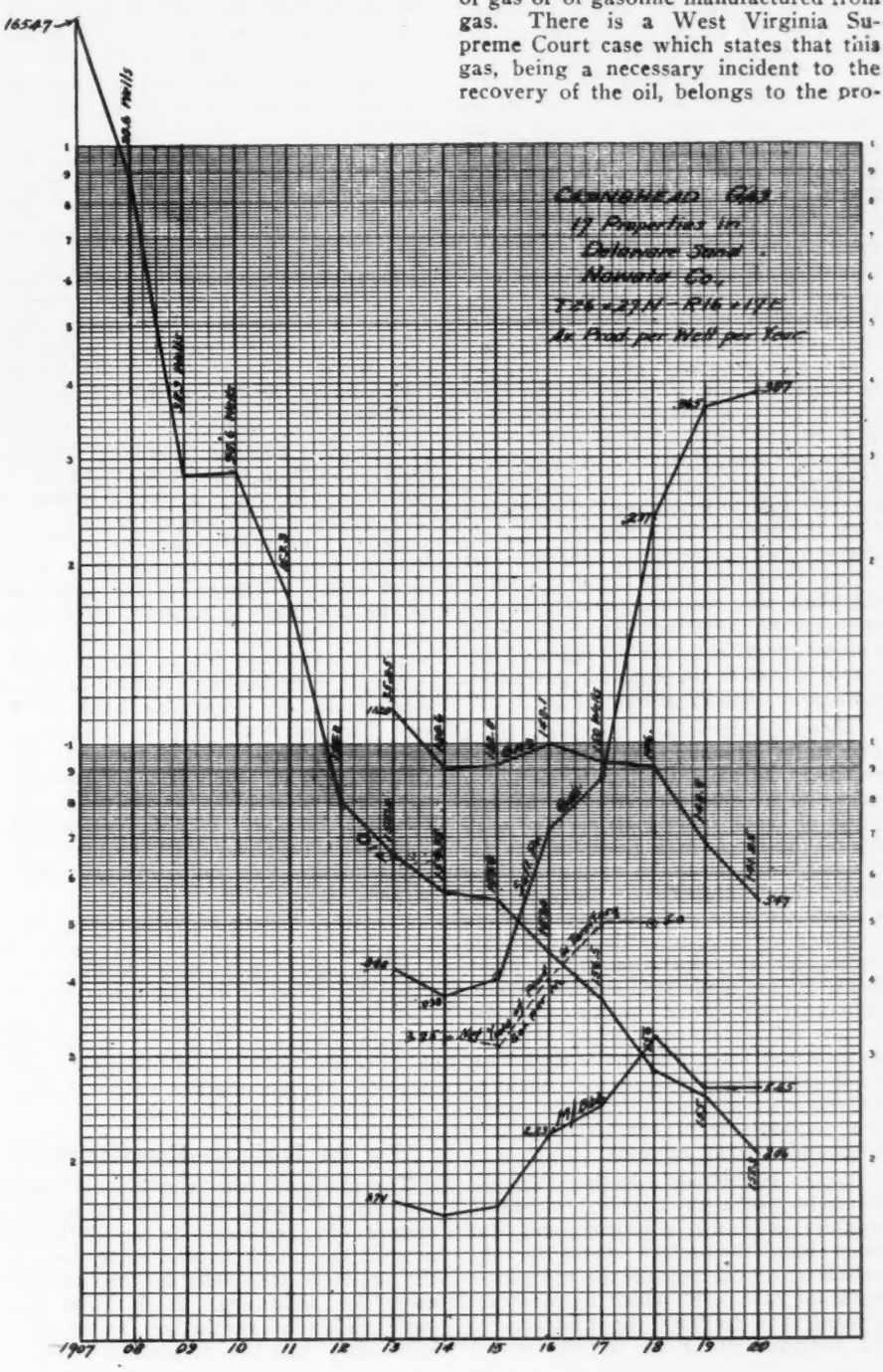
Cost, if acquired subsequent to 3/1/'13.

Revaluation on reorganization, devisement or sale.

The capital sum returnable through depletion arrived at in any of these events is treated in a manner identical to the corresponding value arrived at for oil, and may either be added to the oil value and depleted as part of it, or carried in a separate depletion table, depletion deductions being figured on any reasonable basis.

Casinghead gas production has an advantage not enjoyed by oil, in that all receipts are net profit. There is no expense to the producer in producing casinghead gas, since the gasoline manufacturer takes it at the mouth of the well and supplies meters, pipe lines, etc., for transporting the gas and manufacturing the gasoline.

Early oil leases made no mention of casinghead gas, and seldom made provision for payment of royalty on sales of gas or of gasoline manufactured from gas. There is a West Virginia Supreme Court case which states that this gas, being a necessary incident to the recovery of the oil, belongs to the pro-



ducer where the lease specifies a royalty of a part of the oil produced (Eaton vs. Wilcox, 32 Hun. 61, Wood Co., etc., Co. vs. West Virginia, etc., Co. 28 W. Va. 210). More recent leases however, especially those granted by the Department of the Interior, are very explicit in stating the royalty rate to be paid on casinghead gas. Where provided for in the lease, or otherwise, thus establishing the fact of an agreement between the parties to pay for this gas, royalty owners may also set up a value, if such value can be shown to have existed on the basic date.

For the Manufacturer of Casinghead Gas Gasoline

The manufacturer of gasoline from casinghead gas has contact with the Oil and Gas Valuation Section through the operation of Article 223 of Regulations 45 and 62, which state that "Casinghead gas contracts have been construed to be tangible assets and their cost may be added to the capital account returnable through depletion . . . ." It therefore becomes necessary to determine the amount of capital invested in these contracts in order to arrive at the depletable capital sum which is also the capital invested in depletable assets.

The manufacturer who purchases gas as distinguished from the producing manufacturer, whose case will be considered later, owns no natural resource. His property consists of a contract, or contracts, with producers for the purchase of casinghead gas at stipulated rates per M. cu. ft. and one or more plants for the treatment of this gas. The plants consist of engines, compressors, tanks, pipe lines, cooling coils, buildings, etc., and have a value readily ascertainable at any time. The profits from the operation of these plants, with gas supplied under these contracts, are frequently many times the first cost of the plant plus cost of operating in any one year of operation. Hence the chief element of value in the possesion of the manufacturer is the contract guaranteeing him his supply of natural gas.

These contracts are acquired in a number of ways, and the manner of acquisition determines whether or not a valuation may be allowed. In the majortiy of cases, individuals arrange with the oil producers in a given locality for the purchase of all the casinghead gas from their properties, blocking up enough territory or gas production, as indicated by tests, to secure an adequate supply for the operation of a plant. Contracts are made with the individuals, who generally have to agree, under penalty of forfeiture of their contract, to erect a plant within a specified time. Such contracts are generally acquired without cost although in recent years, new contracts in proven territory have commanded large bonuses.

These individuals, having assured themselves of a gas supply, proceed to organize a stock company and (a) either issue themselves stocks for the contracts; or (b) buy up the company's stock for cash with which to construct a plant, and transfer the contracts to the company gratis (as a gift) or (c) combine the two operations. In the first two cases a valuation of the contract is clearly necessary in order to arrive at the proper figures for the invested capital of the company. To allow par value of the stock issued for the contract to determine its value would be to injure the government in the event that an excessive amount had been issued for it; and to injure the taxpayer, in the event, as generally happens, the par value of the stock issued for it had represented merely the allocation of ownership interest and had no bearing upon the real value of the contract. In the last case, where some stock is sold for cash and some issued for the contract, the value of the contract may be indicated—not established—by the cash price received for the stock sold. The facts in each particular case should be very carefully considered to determine to what extent this cash price reflects the actual market value of the stock, since it is clear that if all the stock sold for cash were subscribed by the organizers, the price received would have no bearing on the market value of the stock, no stock having been placed on the market

Frequently, contracts will be acquired by the officers of a going gasoline company and turned in to the corporation "as a gift"; claims for paid-in surplus being predicted upon this event. Generally, such claims for revaluation cannot be allowed for the reason that it is the duty of officers to perform such services for their company as will tend to increase or assure the continuity of its business. Such acquisition is in the natural course of business.

There is a possible contingency under which contracts may be acquired by a corporation after it has started business, and a claim for paid-in surplus sustained. This is the case of a stockholder, not an officer, making a contract with a producer for the purchase of the producer's gas, and then donating it to the company. If stock is issued in exchange for it, the problem is simple, even lacking recorded sales of stock, since the acceptable book value per share of stock may be used as a basis for arriving at the value of the contract. If no stock or other valuable consideration is given in exchange, the contract becomes paid-in surplus in toto, and must be valued by analytical appraisal or other suitable independent means.

Contracts for the purchase of casinghead gas are sometimes acquired by a corporation for cash, stock, or other consideration. When the consideration is cash, the value as invested capital is established without further investigation, but when other consideration has passed, the fair market value of this must be established by valuation.

For the Producer—Manufacturer

The producer who uses his own gas to supply his own plant for the manufacture of gasoline is in no different position as regards base of value than is the producer who sells his gas to another for treatment. Both have the same rights to revaluation as of any basic date, but the problem of determining value for the manufacturing producer is complicated by the probable difficulty in arriving at the value of the gas, which is the resource. Cases under this class will generally be located in districts where but little gas is sold; and where, in consequence there is no ready basis for establishing market values. Such taxpayers generally try to establish the value for their raw material on the basis of the profit from the sale of the manufactured product. This, of course, is not permissible, since it includes manufacturing profit in the value of the natural resource. Where other producers in the vicinity sell their gas, the prices received by them may be used as an indication of value in the case under consideration, but, lacking such information, it is generally necessary to arrive at a price by agreement in conference.

Valuation Methods Used by Taxpayers

(1) For producers and royalty owners.

A common method of valuation used by taxpayers who are producers of casinghead gas is to add a flat amount to the unit value of the oil produced, thereby increasing the depletable capital sum by a proportionate amount. Frequently, this increment is merely stated to be reasonable, and no figures are given to substantiation, but occasionally an attempt is made to substantiate the increment used. This method is very satisfactory from many points of view, but in some localities, notably in the eastern fields, depletion of the capital sum for gas, when taken at the rate of oil production, causes too great a deduction in the early years of operation and too small a one in the later years. This, for the reason that in these fields the rate of decline of gas is less than that of oil. In the Mid-Continent fields, where the rates of decline of oil and gas closely agree, this objection does not have so much weight. An increase in selling price of the gas may be anticipated, due to the almost certain increase in the gasoline content of the gas. But care should be taken not to include in the increased selling price for gas any element dependent upon an increasing selling price for gasoline.

Another method used by producers is to make an independent analytical appraisal of the casinghead gas based on the history of the property under consideration or of other properties in the same locality. This is also a proper method, and here also an anticipation of an increasing selling price for gas, on the basis outlined above, is proper.

Many taxpayers attempt to avoid the use of discount by setting it off against a probable increase in selling price of gas. This should not be accepted without careful investigation, as for different sands the rate of probable improvement in gasoline yield may or may not equal the discount.

(2) For Manufacturers.

The analytical appraisal is the form chosen by most manufacturers of casinghead gasoline for the valuation of their contract. Valuations on this basis are readily checked, but care must be

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exercised to exclude elements of value not inherent in the natural resource. An example of such an element is the profit realized from resale, as blended gasoline, of the material used in blending. Anticipation of increase in yield and consequent increase in cost of gas is proper, but no increase in the estimated selling price of the product for future years should be permitted. The relation between discount and rates of increase in yield and decline in quantity of gas depends on local conditions.

(3) For the Manufacturing Producer. Manufacturers who produce their own gas have presented claims for value based on either the analytical appraisal or the increment method. In either case an attempt is frequently made to include in the estimated net profits upon which the value is based, pure manufacturing profit. This of course, cannot be ascribed to the natural resource, which in these cases is owned by the taxpayer. This appears to penalize the manufacturer who owns prduction, as against the manufacturer who buys his gas outside under a contract. The latter is permitted to set up for his contract a substantial value as invested capital. It is impossible to avoid the discrimination, since there is no provision in the law for arbitrarily increasing a taxpayer's invested capital, and, as has just been stated, the depletable capital sum must represent only the value of the resource in place, and not the value of some product made from it.

There is appended to this paper, historical curves on 17 properties in the Delaware sand, Nowata county, Oklahoma, showing the decline in oil and gas production; the increase in thousand cu. ft. of gas per barrel of oil; the increase in price received for the gas, and the increase in yield. They have been plotted on semi-logarithmic paper for the reason that on this paper, lines having the same slope indicate an equal rate of change, regardless of their position on the paper. Comparison of rates for different years is thus facilitated and a ready means is thus provided for determining the relation between the rate of oil decline and gas decline.

Richness of the gas is also plotted through the line showing the net yield of plants in the territory in gallons per thousand. This curve, depending as it does, on plant operating efficiency is less reliable as a means for forecasting the future than production curves and should never be carried far enough in the future to show a yield greater than could reasonably be expected in the district.

The appended chart does not include any estimate of future events but is altogether based on what has actually taken place.

The chart shows actual average production per well per year for oil and gas, from 17 properties in the Delaware sand, Nowata county, and is thus more useful in forecasting the future trend of casinghead gas production than the average curve for any single well.

In using an increment to oil value, care must be exercised not to apply it to the estimated oil reserves unless there is immediate prospect of disposing of the gas. In case there was no such prospect, the oil reserves as of the date upon which gas was first sold should be used. This further cuts down the values claimed by many taxpayers. The inclusion of flush production, and of production during a period of wasting gas are favorite methods for swelling values.

A typical example of excessive claims is the following:

A taxpayer in the Electra field in Texas claimed $0.05 per barrel additional for his oil as the 3/1/13 casinghead gas value. He submitted in substantiation that the gas was first used in 1917, at which time there was produced approximately 0.435 M. per barrel of oil, which increased to 0.950 M. per barrel in 1920. The value of $0.05 was applied to all of the oil reserves as of 3/1/13.

We find that $0.05 per M. was a very fair average selling price for the small amount of casinghead gas which was utilized in 1913. Since the number of thousand cu. ft. per bbl. increases as the property ages, and since it had only reached 0.435 in 1917, it is safe to assume that it did not exceed 0.3 M. per barrel in 1913. There are four years between 1913 and 1917, and the discount factor at 10 per cent for the 4th year is 0.683.

$.05 x .3 x .683 = $0.0102. This is the greatest amount which could be allowed, assuming that all the gas was to be recovered in 1917, which is not the case. When this figure is applied to the oil reserves—not of 3/1/13, but of 1917, a figure closely approximating the proper value of the casinghead gas as of 3/1/13 is obtained. When it is considered that in this case the 3/1/13 oil reserves were themselves materially cut, the absurdity of the taxpayer's original total claim is apparent.

AMARILLO, TEX., July 22.—The Amarillo Refining Co., Inc., of this city, has resumed operation of the Reese S. Allen refinery here, and is now running 2,000 barrels daily. Improvements which are being made in the refinery, will increase the capacity to 5,000 barrels. The company is now making 58-60 U. S. motor gasoline, straight-run gasolines, kerosene, distillate and gas oil, and is making shipments to various points in the Panhandle of Texas, according to T. H. Hertzog, in charge of refinery sales.

AMARILLO, TEX., July 22.—P. H. Hertzog, who has been connected in the sales department of the Skelly Oil Co. for the past six years, recently joined the Amarillo Refining Co., Inc., which resumed operations about two weeks ago. Mr. Hertzog will have charge of refinery sales at Amarillo, working under supervision of V. E. Jackson, who is directly in charge of sales for the company, as well as being general manager for the Iowa Park Producing & Refining Co., Wichita Falls, Tex.

Arro O. & R. Holds Its Annual Meeting

LEWISTOWN, MONT., July 25.—The Arro Oil and Refining Co. held the annual meeting of stockholders and directors July 15 at their office in the Montana Building, this city.

At the stockholders meeting the following directors were elected to serve for the ensuing year: H. H. Schwartz, Jr., Lewistown; H. H. Schwartz, Casper, Wyo.; W. R. Nichols, Tacoma, Wash.; Ed. L. Allen, Lewistown; E. L. De Mers, Lewistown; E. B. Schwartz, Casper, Wyo.; George J. Wiedeman, Lewistown; Herbert A. Hover, Chicago, Ill.; Mary A. DuBois, Long Beach, Cal.

Later the directors went into session and elected the following officers: H. H. Schwartz, Jr., president; Ed. L. Allen, vice president and treasurer; E. L. De Mers, secretary.

The showing the past year met with the approval of the stockholders present, and a vote of confidence and appreciation was extended the officers and management.

A dividend of 6 per cent on the preferred stock was declared by the directors at this meeting.

Venezuela Fields Active

WASHINGTON, D. C., July 25.—The Royal Dutch are showing activity about the Maracaibo fields this year. Harbor barriers and sand bars are the greatest hindrances to transportation.

Small freighters capable of going over the eleven foot sand bar must be used exclusively. However, the Shell is adding four larger tankers during 1924 for this traffic. Last year they increased this fleet by twelve small boats.

Drilling operations increased with the incoming year, especially in the La Rosa, Mene Grande and El Mene fields.

It is intimated that a number of oil companies are planning to drill in the vicinity of La Rosa. This is probably due to the bringing in of the 150,000 barrel a day well last year by the Venezuela Oil Concessions, Ltd., and the 60,000 barrel a day well soon after by the British Equatorial Corporation.

El Mene field is particularly important because of the high grade oil found there. The oil is of 41 degrees gravity.

Production in these fields even at this early date is showing a marked gain this year over last.

Exports for the first three months of 1924 were 1,544,000 barrels against 7,200,000 barrels for the same period during 1923.

KANSAS CITY, MO., July 25.—The Grafoleum Products Co., Inc., which has been in business for one year, reports doing a good business and expects to open several filling stations in Kansas City and other cities, according to C. E. Harrell, vice president of the company.

Derrick floor of the deepest drilling well in the world, the Union Oil Co.'s Gardena No. 1. Note the guard over the rotary drive chain, in accordance with recognized safety practice. The crew on tower from left to right are W. E. Kinney, J. W. Maddox, driller, H. E. Keck, Elbert Meyers and C. K. King

Union Oil Now Holds Title For Deepest Rotary Drilling

By Special Correspondent

LOS ANGELES, July 24.

OVERCOMING two small fishing jobs at points below 7000 feet, drillers for the Union Oil Co., of California, have just lowered the banner of the Standard Oil Co. of California and taken from it the distinction of having drilled the deepest hole ever made in the world with rotary tools.

Two months ago the Standard abandoned its Brownrigg-Keller No. 2 hole in the Santa Fe Springs field after running into hot water at 7212 feet. The Union drillers, working on the Gardena No. 1 well in the northwest corner of the Dominguez field, passed a depth of 7315 feet July 17. At that depth a bit was twisted off but recovered at the first fishing operation. A core was taken before drilling was resumed.

Since passing the 7000-foot level the crews had two fishing jobs to accomplish. Once they dropped a bit and succeeded in getting it out. Again they lost a drill collar, and it also came up without great difficulty. In their progress downward the drillers have found no indication of oil, but the field department is committed to the idea of keeping the drill at work so long as no serious mechanical difficulties are met. The hole is a mile and a quarter northwest of Callender No. 1—discovery well of the field—and at least three-quarters of a mile from the nearest producing well in the field.

In some respects this hole is a most remarkable one. It has more than 4000 feet of open hole. Only one string of casing has been set in it. This is a string of 11-inch, which was set at 3050 feet. Fish-tail bits have been used for drilling, and six-inch drill pipe has served for rotating.

Because of the extreme depth of the hole and the weight of the drill string, which is 116,042 pounds, the field department rigged up a special valve, attached to the bottom of the drill pipe, by the use of which the crew has been able to float the drill pipe into the hole, thus taking a great deal of strain off the machinery and the workmen. It has been taking about 10 hours for the crews to make a round trip in running in or coming out to change a bit. The formation in this part of the Dominguez field is such that drilling has been comparatively easy, the drillers say.

Work on this well has been done under the direction of Frank Hill, superintendent of field operations for the Union. The drillers in charge of the three towers are: Wallace C. Maxfield, J. W. Maddox and J. E. Carrier. None of them has taken a day off since the well was spudded in 351 days ago. The actual time consumed in drilling to date has been 309½ days.

Increase Shipments From Big Lake Field

FORT WORTH, July 25.—Settling down after the first few days to a production of 60 barrels an hour, the Big Lake Oil Co.'s No. 10 University lands, continues to hold its record as the best well in the Reagan county field, as well as one of the best for the entire Central Texas fields for the year. The new well is no extension, being between the No. 9, completed a few weeks ago, for better than 1,000 barrels a day, and the No. 5, the present far northeast producer, and a producer of 100 to 150 barrels. No. 10 got the pay at 2,956, and is reported to have drilled only 2 feet so far.

Immediate results have been the increasing of the capacity of the loading rack at Big Lake to 20 cars, and the hastening of storage construction. Oil is moving in tank cars daily, and no immediate difficulty in handling production is anticipated. A pipe line is also being discussed, to be extended from Ranger by one of the major companies.

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The Golfing Guy

"Who's the stranger, mother dear?
Look! He knows us! Ain't he queer?"
"Hush, my own! Don't talk so wild.
That's your father, dearest child!"
"He's my father? No such thing!
Father died, you know, last spring!"
"Father didn't die, you dub!
Father joined a golfing club,
But they closed the club, so he
Has no place to go, you see!
No place left for him to roam,
That is why he's coming home.
Kiss him. He won't bite you, child,
All these golfing guys look wild!"

—Pure Oil News

* * *

Cohn in the Lunch Room

Cohn orders a slice of chocolate cake in a lunch room, but sends it back, canceling the order, and orders a piece of apple pie instead. He eats it, gets up and is about to leave when the waiter accosts him.

"Say, you haven't paid for that pie yet."

"Vot?" replies Cohn indignantly. "Didn't I give you the chawclate cake for it?"

"But you didn't pay for that either."

"And why should I? Did I eat it?"

—Magnolia Oil News.

* * *

About the Same

An old gentleman boarded the trolley car and, luckily finding a seat, sat down next to a friend. He nodded pleasantly, paid his fare, and then said genially.

"Well," what do you think of the weather?"

"Oh, horrible!" said his friend.

"And how's your wife today?" said the old gentleman.

"Oh, about the same," was the reply.

—Magnolia Oil News.

* * *

A. M. Lockhart, vice president of the Rio Grande Oil Co., El Paso, Tex., sends in this one as to why credit men go mad:

"Dear Meester Smith: I got your letter about what I owe you. Now be pachunt. I ain't forget you. Pleez wait. When sum fools pay me I pay you. If this wuz judgement day and you wuz no more prepared to meet your Master as I am to meet your account, you sure would have to go to hel. Trusting you will do thees."

* * *

"Your son must be the idol of the family."

"Yes. He has been idle for twenty-one years."

—Mutual Oildex

In Ye Olden Days

Foot-sore Knight of the Grip, wanting to catch the rattler for the next burg, tried to make time by taking hotel bus to station. Every few minutes the old horse would walk to the side of the road and stop. The Knight of the Grip sticks his head out of the window and yells to the driver, "Is your horse sick?" "Nope." "Stubborn?" "Nope." "What in h... is the matter then?" "Well, he's just so durned afraid I'll yell 'Whoa' and he won't hear me that he stops to listen."

—Milwaukee Tank News

* * *

"As the Twig Is Bent"

A wealthy motorist, while touring through Georgia, drove up to a gasoline station and found the tender a lazy country boy.

"Hey, boy," said the motorist, "I want some gasoline. Get a move on you. You'll never get anywhere in this world unless you push. Push is essential. When I was young, I pushed and that got me where I am."

"Well, boss," said the boy, "I reckon as how you'll have to push again, 'cause we ain't got a drop of gas in the place."

—The Pure Oil News.

* * *

Blow, Sweet Bugle, Blow

Two negro buck privates were discussing the relative merits of their buglers during the World War.

1st Private: "Why, man, dat bugler of ourn am so good, when he plays 'Pay Day' hit sounds 'xactly lak de Symphony Orchestra playing 'De Rosary.'"

2nd Private: "Hush, nigger, you ain't got no bugler a'tall. When our bugler, Snowball Jones, wraps his lips roun' dat bugle an' sounds 'Mess Call' ah looks down at mah beans and says: 'Strawberries, behave; you're kickin' de whipped cream outer de plate!"

—Hawkeye Gusher

* * *

Watchful Waiting

"Well, Jones," a physician asked a young colleague who was just starting in, "how's your practice?"

"In the mornings, practically no one comes," was the reply, "and in the afternoons the rush falls off a bit."

—Milwaukee Tank News.

* * *

Novelette in Three Chapters

The three R's: At 25, Romance; at 45, Rent; at 65, Rheumatism.

—Mutual Oildex

* * *

"There goes a great track man."

"He looks like a hobo to me."

"He is."

—Mutual Oildex

The Vilter Mfg. Co.
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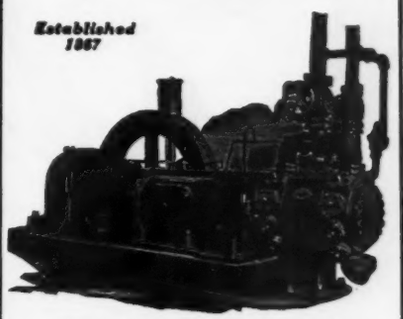
Established 1867



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Canfield

Navy Asks Refiners For Anti-Knock Fuel For Airplanes

GENERAL PROCEDURE OF TEST:

33. The following tabulation is included to furnish a picture of the general procedure of tests:

(a) Physical tests with first 50-gallon sample for determining:

Corrosion by copper dish and strip immersion method.

Freezing temperature and effect of temperature on physical properties.

Presence of suspended matter.

Rate of water absorption.

Distillation range.

Specific Gravity.

Miscellaneous.

(b) Single Cylinder Engine tests with first 50-gallon sample for determining:

Power development (Detonation tendencies, benzol equivalent, and maximum safe compression ratio).

Economy (Specific fuel consumption)

Preignition tendencies.

Optimum Spark Advance (Full and part throttle).

(c) 50-hour Single Cylinder Endurance test with 200-gallon sample for determining:

Relation of physical and single cylinder performance characteristics to that of first 50-gallon sample.

Relation of power development, economy, optimum spark advance, etc. at start of run to that at end.

Effect on combustion chamber parts, valves, etc.

Start of stability tests.

Miscellaneous.

(d) Multi-Cylinder Engine tests with 1500-gallon sample, covering a period of approximately 50-hours for determining:

Relation of physical and single cylinder characteristics to that of first 50-gallon sample (This is a single cylinder test).

(a) Power development, economy and optimum spark advance at full throttle and propeller load.

Miscellaneous.

(e) Multi cylinder Flight tests and physiological tests for which approximately 8,000-gallons will be required.

34. The method of conducting and scope of these tests will be covered in detail elsewhere in this specification. Tests in addition to those described in this specification will be made as required. Tests may be discontinued at any time that the Navy Department considers necessary or desirable.

35. During conduct of all tests attention shall be paid to rate of accumulation of sediment in fuel systems and corrosion in the systems, accumulation of carbon and foreign materials in intake passages and combustion chamber and to any abnormal or unusual conditions attendant upon use of the fuel under test.

Test Instructions and Definitions

36. Corrosion tests shall be conducted in accordance with methods 530.1, 530.21 and 530.31 of United States Government Specification For Lubricants and Liquid Fuels and Methods for Testing, Specification No. 2c. Additional tests consisting of immersing strips of various metals in the fuel may be made if considered necessary or desirable.

37. Usual laboratory methods shall be used in the determination of freezing temperature, effect of temperature on physical properties of the fuel, presence of suspended matter and rate of water absorption.

THE first installment of the specifications set forth by the Bureau of Aeronautics for an anti-knock fuel for airplane motors which the Navy department asks refiners to submit for tests, was published on page 21 of the July 23 issue of this paper. This is the second and concluding installment.—Editor.

38. Effect of temperature on engine performance shall be determined by varying the temperature of carburetor air supply. Special refrigeration apparatus for reducing the temperature of carburetor air is available at the Aeronautical Engine Laboratory, Naval Aircraft Factory, Philadelphia, Pa., and Bureau of Standards, Washington, D. C. The temperature of the fuel shall also be varied.

39. Distillation tests shall be conducted in accordance with method 100.12 of U. S. Government Specification For Lubricants and Liquid Fuels and Methods for Testing Specification No. 2c.

40. Such tests as are necessary in order to determine stability of the fuel shall be made. Five two-gallon samples shall be stored in sealed containers in a cool dark place. Additional unsealed samples may also be tested. At the end of each two month period one sample shall be tested in the single cylinder engine for determining power devolopment, specific fuel consumption, detonation and preignition characteristics and optimum spark setting. Results shall be compared with original characteristics.

41. Tests for determining physiological effects shall be made in whatever manner the Chief of Bureau of Medicine and Surgery and Chief of the Bureau of Aeronautics consider necessary or desirable.

42. The general method of procedure in conducting engine tests is to make a series of runs with the test fuel and to follow these immediately with a duplicate set of runs using a benzol-gasoline blend. Similar data should be plotted on the same paper for comparative purposes. In order to reduce the time required in conducting the tests the number of check runs with the benzol gasoline blends will be kept as small as practicable.

43. The engine tests shall start with a determination of the benzol equivalent of the fuel. Except in special cases where reference to the standard benzol-gasoline blend or other blend is necessary, all references shall be made to its benzol equivalent. Its benzol equivalent may be greater that the previously specified "Standard benzol-gasoline blend."

44. Power output of the single cylinder engine will be measured by means of an electric cradle dynamometer and of the multi-cylinder engine by means of an electric cradle dynamometer or torque reaction stand but if a means shall be employed which will prevent erroneous indications due to the revolving slip stream or noncoincidence of center of thrust and center of oscillation of the torque stand.

45. The power output of the engine and absorbed by the dynamometer shall be known as the observed brake horse power.

46. The power required to operate the engine with the ignition cut off and the throttle in the position at which the corresponding power run was made shall be known as friction power and expressed as friction horse power. Friction power readings shall be made as soon as conditions become stable, after making a power run but not within two minutes after termination of the power run.

47. The sum of the brake power and friction power for each speed shall be known as the indicated power at that speed and expressed as indicated brake horse power.

48. The mean effective pressure will be derived from the following equation:

$$MEP = \frac{792{,}000\ Hp}{DN}$$

Where MEP = $\left.\begin{matrix}\text{Indicated}\\ \text{Brake}\\ \text{Friction}\end{matrix}\right\}$ mean effective pressure

Hp Indicated, brake or friction

D = Piston displacement in cu. inches

N = r. p. m. of crankshaft.

49. The temperature of carburetor air supplied to the single cylinder test engine shall be maintained at 100°f. plus or minuse 5°f. No power corrections will be made for variations in atmospheric pressure, temperature or humidity.

50. Multi cylinder tests shall be made with prevailing atmospheric temperature and pressure. The indicated horsepower shall be corrected to standard atmospheric conditions of 59°f. (15°C) and 29.92" hg. Corrections shall be made on the assumption that the power varies directly as the atmospheric pressure and inversely as the square root of

the absolute air temperature, both measured at entrance to carburetor.

51. Indicated specific fuel consumption shall be expressed as pounds of fuel consumed per indicated horse power (uncorrected for temperature or pressure) per hour.

52. Fuel consumption will be measured by determining with a stop watch the time required to consume a convenient weight of fuel.

53. In adjusting the mixture ratio for best economy at maximum power the following method may be used:

(a) Increase richness until no further increase in power results.

(b) Weaken mixture until the first noticeable decrease in power results.

(c) Slightly enrichen mixture. (This may result in a slightly over rich mixture) Make observations.

(d) Slightly weaken mixture and make a second set of observations.

(e) Plot both sets of observations or obtain average by other suitable means.

54. Speed of crankshaft rotation will be determined by measuring with a positive revolution counter the revolutions over a convenient period of time as determined with a stop watch. Single cylinder runs should be made at 1500 r. p. m.

55. Oil outlet temperature shall be maintained between 140-150°f. Water outlet temperature shall be maintained between 170-180°f.

56. Before each series of runs care shall be taken to ensure that the engine is in standard condition (normal compression, clean cylinder, properly functioning spark plugs, etc.)

57. The single cylinder tests may be made using a standard Liberty cylinder equipped with a six to one or higher compression volume ratio piston. The bore of the cylinder is five inches and stroke of the piston seven inches. One inlet and one exhaust valve is provided with the following timing: Inlet opens 10° after top centre, and closes 45° after bottom center, exhaust opens 50° before bottom center and closes 10° past top center. A standard Zenith single inlet carbureor will be used, equipped with a 34 m. m. choke and adjustable fuel metering valve. A Delco battery coil ignition system will be used.

58. The multi cylinder tests will be made in whatever engine with a suitable compression ratio is available at the time.

59. The spark setting (degrees of crankshaft travel at which the spark occurs before or after top dead center of the piston) will be manually controlled.

60. Detonation will be determined by (1) sound a sharp, high pitched metallic note as distinguished from a dull thud usually resulting from preignition, (2) marked increase in heat dissipated to the jacket water (3) bursting of metal diaphrams as described in National Advisory Committee for Aeronautics' Technical Note 101 and (4) reduction in power.

61. Auto (self) ignition will be determined by opening the ignition circuit and noting whether or not complete or partial power development continues. If it continues auto ignition is present.

62. Preignition is auto ignition occurring at a point so early in the stroke that the power development is reduced. It can be detected by (1) change in spark setting - If a change in setting does not result in change or the usual change in power or degree of detonation preignition is present (2) a marked reduction in power folowed by an increase in power after the combustion chamber has cooled and (3) continuance of operation but with an increase in degree of detonation and bearing knocking and a continuing reduction in power which may eventually reach zero as a result of ignition occuring progressively earlier in the stroke.

63. In specifying detonation the following code shall be used:

Nill Slight Average—Corresponding to that attendant upon the use of Domestic Aviation Gasoline in a 5.42 Liberty engine. It can be considered as the maximum safe value.

Heavy—Continuous and excessive.
Severe.

64. The accepted definition of mixture ratio is the ratio of air to fuel (or fuel to air) in the mixture supplied to the engine and is usually expressed as pounds of air per pound of fuel (or pound fuel per pound air). However, because of the difficulty attendant upon air measurements the mixture ratio runs shall be made at constant crank speed (therefore constant air flow) and measurement made of pounds of fuel supplied per hour. The mixture ratio will therefore be proportional to the pounds of fuel consumed per hour.

65. All single cylinder tests shall be made at constant crank speed (preferably 1500 r. p. m.) unless otherwise specifically so stated.

66. The compression ratio at which average detonation results with normal spark advance, full throttle and mixture ratio at which best economy occurs at full throttle shall be known as the maximum safe compression ratio.

67. Compression volume ratio is defined as the ratio of the total cylinder volume to the displacement and is expressed as follows:

$$\text{Compression Ratio} = \frac{\text{displacement plus clear. vol.}}{\text{clearance vol.}}$$

Single Cylinder Engine Tests

General Performance Characteristics:

68. The single cylinder engine tests will commence with such preliminary runs as are necessary for determining whether or not the fuel approaches the requirements of the specification and also for determining an index to its salient characteristics to facilitate further testing. These runs will usually consist in determining approximately the benzol equivalent (percentage benzol required in a benzol-gasoline blend to equally suppress detonation and required spark advance.

Detonation and Preignition Tendencies:

69. Having determined the approximate benzol equivalent and therefrom the maximum safe compression ratio runs at several mixture ratios shall be made for definitely determining the detonation (benzol equivalent) and preignition tendencies of the fuel.

70. These tests shall be made at the previously determined approximate maximum safe compression ratio with normal spark advance. (Unless there is conclusive evidence that the normal spark advance for the fuel is not the same as that required with the standard benzol-gasoline blend the same spark advance shall be used. If as a result of subsequent testing it is found that the spark was not normal these tests should be remade with the correct normal spark advance). Operate the engine at full throttle with a mixture ratio so lean that the engine is on the verge of ragged running. Estimate detonation and preignition by the methods previously described. Repeat these observations over a wide band of mixture ratios covering on both the lean and rich side, points at which a marked decrease in power results. Plot the data as shown on figure 1.

71. Repeat these runs at a compression ratio at which average detonation results when operating on Domestic Aviation Gasoline. (This will be at a compression ratio of 5.42 and full throttle). This is principally for determining the preignition tendencies as compared with Domestic Aviation Gasoline. Detonation with the special and standard benzol-gasoline blend may not result. As these runs are purely comparative spark plugs that preignite readily may be used.

Power, Economy and Spark Advance:

72. A series of part throttle mixture ratio runs at several spark settings shall be made. For these runs the engine shall be operated at a compression ratio at which no detonation or preignition occurs with Domestic Aviation Gasoline or the test fuel. Results shall be plotted as shown on figure 2.

73. From these curves (figure 2) data for several mixture ratios shall be plotted that will show the variation in IMEP with spark advance. Figure 3 is a sample curve.

74. From the spark advance—IMEP (figure 3) curves, determine the spark advance required for maximum power (IMEP) at each mixture ratio and plot IMEP, Specific Fuel Consumption and corresponding Optimum Spark Advance against mixture ratio, as shown on figure 4. These curves will show for each mixture ratio the maximum IMEP and corresponding specific fuel consumption obtainable with an optimum sparksetting at part throttle.

75. Repeat these runs at full throttle (average detonation)

76. As a result of these two sets of runs data will be available showing the relative power, specific fuel consumption

and optimum spark setting both with and without detonation.

Miscellaneous:

77. Additional tests may be made as required.

Multi-Cylinder Laboratory Tests

Full Throttle Runs:

78. Full throttle multi-cylinder engine tests shall be made for determining the relation between bhp, specific fuel consumption and crank speed with a spark setting at which serious detonation does not result. If necessary or desirable similar runs at other spark settings may be made. The compression ratio of the engine shall be equivalent to the maximum safe value for the fuel. Check runs with a benzol-gasoline shall be made as required.

Propeller Load Runs:

79. Propeller load runs shall be made with the carburetor adjusted at rated speed for maximum economy at maximum power and at each lower speed for maximum economy. The spark setting for all runs shall be that at which serious detonation at rated speed does not occur. In making these runs it shall be assumed that the power required to drive the propeller varies as the cube of the speed. Check runs with a benzol-gasoline blend shall be made as required.

80. Results of tests shall be plotted as brake horse power, specific fuel consumption, heat to jacket water ÷ heat to bhp, and manifold vacuum vs crank speed. Benzol-gasoline check data shall be plotted on the sheets with the test fuel data for comparative purposes. The type curves are shown on figure 5.

Multi Cylinder Flight Tests:

81. Samples of the fuel may be used in flight for determining its general performance.

82. During all single and multi-cylinder tests close observation shall be made for determining any abnormal accumulation of sediment in the fuel tanks, strainers, lines and carburetors and any abnormal engine performance. Particular attention shall be paid to starting and maneuvering characteristics.

ONAKA, S. D., July 25.—E. M. Everson, agent for the Standard Oil Co. of Indiana here, reports that there has been much rain in his territory, and that there are prospects for a big crop in that state. The Standard has just completed remodeling its warehouse here and has installed storage tanks.

The Onaka Garage changed hands recently. The new proprietor, Anton Dusel, s handling Red Crown Gasoline, Polarine and Enarco oils, according to Mr. Everson.

SEDALIA, MO., July 24.—A warehouse of the National Refining Co. was recently struck by lightning here, which caused a fire to break out in the motor room. It followed the electric wires throughout the building and although the building and stock was damaged, the fire was extinguished before any drums exploded, according to R. L. Richmond, district sales manager of the company.

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August 27, 1923

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Your letter of August 24th with questionnaire received. When you sent this out you were, no doubt, unaware of the fact that we have a complete Brown installation at our refinery at Iowa Park.

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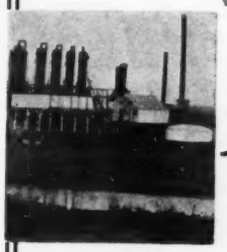
Up to the present time we have had no repairs made and have had no expense whatever, in connection with them.

Very truly yours,
INTERSTATE GASOLINE COMPANY
By C. H. Berryman
Branch Manager

OHB:GRT



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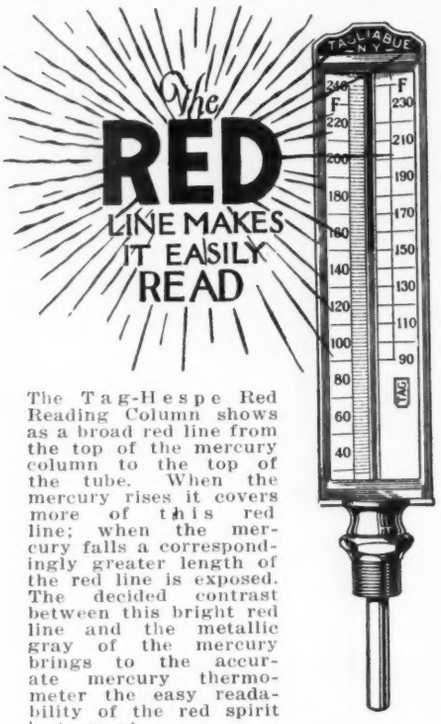

The Tag-Hespe Red Reading Column shows as a broad red line from the top of the mercury column to the top of the tube. When the mercury rises it covers more of this red line; when the mercury falls a correspondingly greater length of the red line is exposed. The decided contrast between this bright red line and the metallic gray of the mercury brings to the accurate mercury thermometer the easy readability of the red spirit instrument.

Tag-Hespe thermometer glass (tubing) is in every way similar to ordinary lens front thermometer glass except that in Tag-Hespe Glass the BACK of the fine capillary bore (up and down which the mercury travels) is made of bright red glass. This red streak of glass extends all the way from the top of the thermometer down to the bulb. Note particularly that the red glass is in the back of the bore and NOT at the back of the tube (see cross section).

The red line attracts the eye at first glance and it is easy to follow it down and take the reading at the bottom, which is, of course, the top of the mercury column. The broad line of red stands out like a semaphore set at danger. You CAN'T miss it.

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System For Measuring Fire Hazard Of Tanks, Stills And Contents

THIS is the second and concluding installment of the new analytic system prepared by the western Actuarial Bureau for the measurement of the relative fire hazards of oil tanks and stills, and contents. The first installment was published on page 83 of the July 23 issue of this paper. The system is applicable to all mineral oils, benzol and similar volatile and flammable products of coal tar, alcohol, and turpentine. The system is being used in the Central Union district which includes Ohio on the east, Colorado on the west and Oklahoma and Louisiana on the south.

—Editor.

G. EXPOSURES

Note 1: Reduce total charge for absorbed exposure by same percentage that is allowed to exposed risk for steam jet and (or) foam protection.

Note 2: Waive exposure from condensers, receiving houses, acid, alkali and water tanks.

Note 3: Exposure charges should not be reduced for same occupancy.

Note 4: Increase charge one-half if any exposed tank is wood, or if on wooden or unprotected metal supports.

31. Exposure From Buildings: Charge the following percentages of final rate of exposing risk, less aftercharges and all exposure received from oil tanks, agitators and stills. Exposure from buildings should be limited to exposure which would result if all exposing buildings occupied by same insured were rated as one building. For dimension table see schedule for oil refineries.

	Grade of Exposure			Charge
	Normal	Large	Small	
a.	Within 20 feet	Within 40 feet	Within 10 feet	15%
b.	20 ft. and under 30 ft.	40 ft. and under 60 ft.	10 ft. and under 15 ft.	10%
c.	30 ft. and under 50 ft.	60 ft. and under 100 ft.	15 ft. and under 25 ft.	5%

Note: Wooden tank or tank on wooden supports should take rate not lower than highest rate on buildings which class as frame within distances named in Item 31 a.

Note: Wooden tank or tank on wooden supports should take rate not lower than highest rate on buildings which class as frame within distance named in Item 31a.

32. Exposure From Tanks and Stills: Charge according to table below, limiting charge to 50% of the amount that rate of exposing tank or group exceeds rate of exposed tank or group (using unexposed rates, including all credits). Ignore 50% limit if exposing tank is part of another risk of other ownership.

	EXPOSING Single Tank: Kind of Oil	EXPOSING Single Tank: Capacity of Tank in barrels	Group: Capacity of such tanks of group as are within exposure distance of exposed tank or nearest tank of exposed group	Distance Shell to Shell: Less than 25 ft.	25 to 49 ft.	50 to 99 ft.	100 to 199 ft.	200 to 279 ft.	280 to 380 ft.
a.	All	1000 or less	1000 or less	Group	5%				
b.	All	1001 to 5000	1001 to 5000	Group	10%	5%			
c.	All	5001 to 25000	5001 to 25000	Group	*Group	10%	5%		
d.	A-B-C	25000 or more	25000 or more	Group	*Group	10%	5%		
e.	D		25000 or more but all tanks less than 25000 each	Group	*Group	10%	5%		
f.	D exposing C D	25000 or more	25000 or more with at least one tank of 25000 or more	Group	Group	15%	12%	8%	5%
g.	All	Stills		10%	5%				

*When a tank or group is exposed within 50 feet by a group of aggregate capacity exceeding 5000 barrels and is not within group distance (see Note 2, under C. Basis-rates), exposure charge should be made 15%.

Note 1: Charge exposure from tank, tank group, agitator or still which gives the highest charge; make only one charge under **Item 32**. If buildings intervene, charge exposure from tank, agitator or still across actual clear space (i. e., deduct building from clear space) unless both building and its contents class incombustible.

Note 2: No charge need be made from single tanks of not more than 100 barrels capacity, nor from groups consisting of not to exceed two such tanks.

Note 3: If exposure is from underground tank containing **A, B or C** oil reduce distances in table one-half. Waive if not exceeding 1,000 bbls. capacity.

Note 4: In groups, if underground tank is nearest to exposed risk, radiate exposure from final rate of such tank; such charge should be not less than that taken from rate of above tank nearest to exposed risk.

Note 5: If exposure (oil—not buildings) is at a higher level, distances should be doubled unless either exposing or exposed risk has standard dike.

33. Exposure From Derrick or Rig: Tank, tank group, or other property within 50 feet of a derrick or rig must take rate not less than that applying to derrick or rig.

H. UNDERGROUND TANKS

34. If tank is entirely covered with at least 18 inches of earth, reduce final rate one-half (whether tank is detached or forms part of a group).

Reduction should not apply unless earth over entire roof is above surrounding level, or (if not so arranged) unless there is a dike around tank at least 18 inches high.

K. STILLS, CONDENSERS, ETC.

35. Stills, whether in or out of tank group (as per tank group rule, considering still as a tank for this purpose), should take their own individual rates and give exposure to tank or tanks as per exposure rules, but when grouped with a tank or tanks should take rate not lower than tank or group. Waive exposure to fire stills and their condensers. Charge exposure to steam stills and their condensers as to tanks.

	Liquid capacity, including oil in all appurtenances except condensers	
	Not more than 50 bbls.	More than 50 bbls.
a. Cracking Stills (or other stills) operated at pressure exceeding 5 pounds.	$3.50	$4.00
b. Cracking Stills arranged so that principal deposit of carbon is in a separate chamber to which direct fire heat is not applied, OR with constantly-moving power scraper or drag which prevents carbon from adhering to shell	3.00	3.50
c. Ordinary Stills operated at pressures not exceeding 5 pounds (or steam stills arranged for fire heating)	$2.25	
d. Tar Stills	2.00	

Note 1: Reduce rates under subitems **c.** and **d.** 5% for approved automatic means of shutting off flow in event of a break in draw-off line.

e. Steam Stills, not arranged for fire heating ..... .90

(Reader note: Subheads "f" and "g" under number 35 in classification "K" are on bottom of first two columns of next page.—Ed.)

Note 2: When supports of apparatus exceed 15 ft. in height they should be considered protected if properly protected up to at least a height of 15 ft. If part of devices are on protected supports and part are on unprotected supports, or if part of devices have combustible supports or parts, an average rate for all appurtenances should be made, according to the number of parts at rates applying to each.

h. Condenser Protected by Fire Wall: Reduce rate one-fifth if all fire-heated stills within 50 feet are surrounded by a masonry dike, provided that wall on side toward condenser is as high as bottom of condenser box. If wall on side toward condenser is at least 10 feet from condenser it need be only 6 feet high. Masonry wall, if without openings and not including any unpro-

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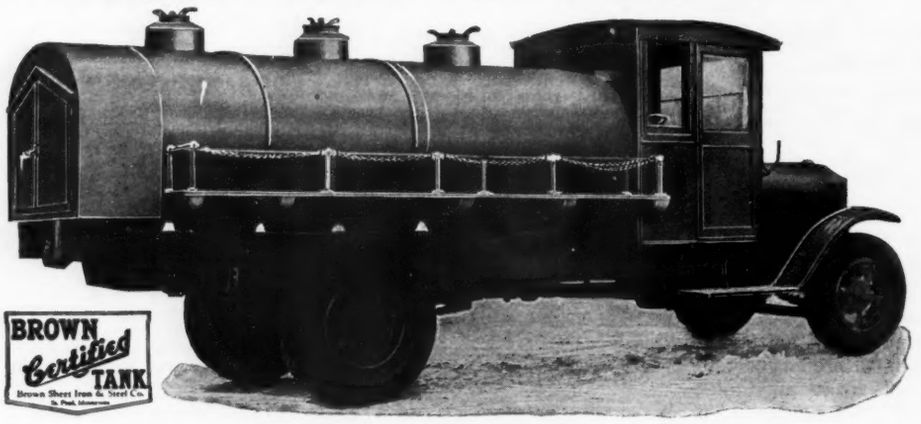

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tected metal columns, may serve as both dike wall and support for condenser.

Note 3: When space between condenser supports is enclosed and used as a building, use condenser rate for entire structure and contents, but if occupied as control house for cracking (pressure) stills, or if with roof other than bottom of condenser box (i. e., condenser box resting on roof of a building) rate as a building and rate condenser as a condenser, the latter to take gross rate not less than gross rate of building on which it rests. When occupancy takes condenser rate and the only combustible parts of the structure consist of light wooden panel walls between condenser supports, such combustible parts should be waived.

j. **Control Houses** of cracking (pressure) stills: Rate as receiving house, pump house, or otherwise according to occupancy.

k. **Foam Protection:**

1. For approved protection of two solution hydrants between 50 and 250 feet from risk, supplied from approved system and provided with adequate equipment of hose, mixing tubes, nozzles, etc., reduce any of above rates 5%

2. For approved equipment of 40 gallon wheeled foam extinguishers, reduce any of above rates ... 2%

Note 4: k.1. and **k.2.** are cumulative up to 6% for both.

L. AFTERCHARGES

36. **Objectionable features** of management or condition of premises, such as dilapidated tank top (roofboards exposed, etc.) oil settlings around tanks, etc., or unsafe condition of settings or supports of stills and condensers 5c to $1.00

M. COINSURANCE OR REDUCED RATE CONTRIBUTION CLAUSE

7. **For attachment of clause** in connection with specific coverage on each tank, agitator still, condenser, etc., or on contents of each, the following deductions may be made:

a. 80% Clause 10%

b. 90% or 100% Clause 15%

Note: For permissible exclusions, see Rule Book.

N. BLANKET INSURANCE

38. **A blanket form policy** covering under one item a tank, agitator, still, condenser, etc., and its contents; two or more tanks, stills, condensers, etc. and (or) their contents, may be written under conditions and with rate credits as follows:

a. With **80% Coinsurance** and Pro Rata Distribution Clauses, or 90% Coinsurance Clause. No reduction rate is allowable for attachment of Coinsurance Clause.

b. With **90% Coinsurance** and Pro Rata Distribution Clauses, or 100% Coinsurance Clause. Deduct credit for 80% Coinsurance Clause. (No additional credit for use of highest rate instead of averaging rate.)

Note: Pro Rata Clause need not be used if coverage is on a single risk and its contents.

O. AVERAGE RATES

39. **Average Rates** shall be computed as follows:

a. Tanks: Multiply full capacity of each by its rate and divide sum of results by total capacity of all.

b. Stills and Agitators: On statement of values.

c. Oils: In tanks, stills and agitators: Multiply full capacity of each by its rate and divide sum of results by total capacity of all. Figure stills at 70% of actual capacity.

P. PREMIUM ADJUSTMENT COVERAGE

40. **Premium Adjustment Coverage** on mineral oils only, at refineries and in connection therewith, not including distributing and filling stations: Use average rate figured on capacities as above, increasing such average rate 5% to obtain final average rate.

Note: "Exposed" as above used in connection with coinsurance credits is intended to include all tanks exposed by buildings within distances named in **Item 31**, or by oil tanks within group distance. Tanks beyond these distances take coinsurance credits as if "unexposed," but exposure charges are to be made as directed below.

a. **Roof:** If with wood sheathing surfaced with wood, composition or metal, add (except to wood tanks) .....$ .05

b. **Exposures:**

1. Apply rules under Items 31 and 32.

Note 1: Tanks described in **Items 41.** and **42.** (with or without wooden roofs): reduce exposure from both buildings and tanks one-half and waive all charge at distances where a 5% charge appears in Expense Tables.

2. Railway exposure: Charge Item 24, when applicable, to wood top tanks only.

Note 2: Tanks should take gross rate of highest rated oil tank or group within group distances except that final rate of steel tank on ground or masonry supports, with or without wood roof, may be reduced one-half.

R. TANK CARS AND OILS

47. In private yard of insured or at loading racks, with 100% Coinsurance or Reduced Rate Contribution Clause $1.25

S. TORNADO INSURANCE

48. Rates and rules published in the state where property is located should apply with the following qualification:

In the application of credits only, for the Coinsurance or Reduced Rate Contribution Clause steel tanks (not elevated) having all-steel tops should be treated as of superior wind resistive construction, and wooden tanks, or steel tanks having wooden roofs, should be treated as of ordinary construction.

Construction	Supports	Basis Rates	Coinsurance	Coinsurance Credits to be applied Unexposed		Exposed	
				Protected	Unprot'd	Protected	Unprot'd
41. Steel	Ground or Masonry	$0.16	80%	30%	20%	30%	20%
			90%	45%	35%	45%	35%
42. Steel	Steel	.16	80%	30%	20%	15%	0
			90%	45%	35%	20%	0
43. Steel	Wood	.27	80%	15%	0	10%	0
			90%	20%	0	15%	0
44. Wood	Ground or Masonry	.32	80%	15%	0	10%	0
			90%	20%	0	15%	0
45. Wood	Steel	.32	80%	15%	0	10%	0
			90%	20%	0	15%	0
46. Wood	Wood	.32	80%	10%	0	10%	0
			90%	15%	0	15%	0

Note: "Exposed" as above used in connection with coinsurance credits is intended to include all tanks exposed by buildings within distances named in Item 31, or by oil tanks within group distance. Tanks beyond these distances take coinsurance credits as if "unexposed," but exposure charges are to be made as directed below.

Saves Wear on Bull Rope

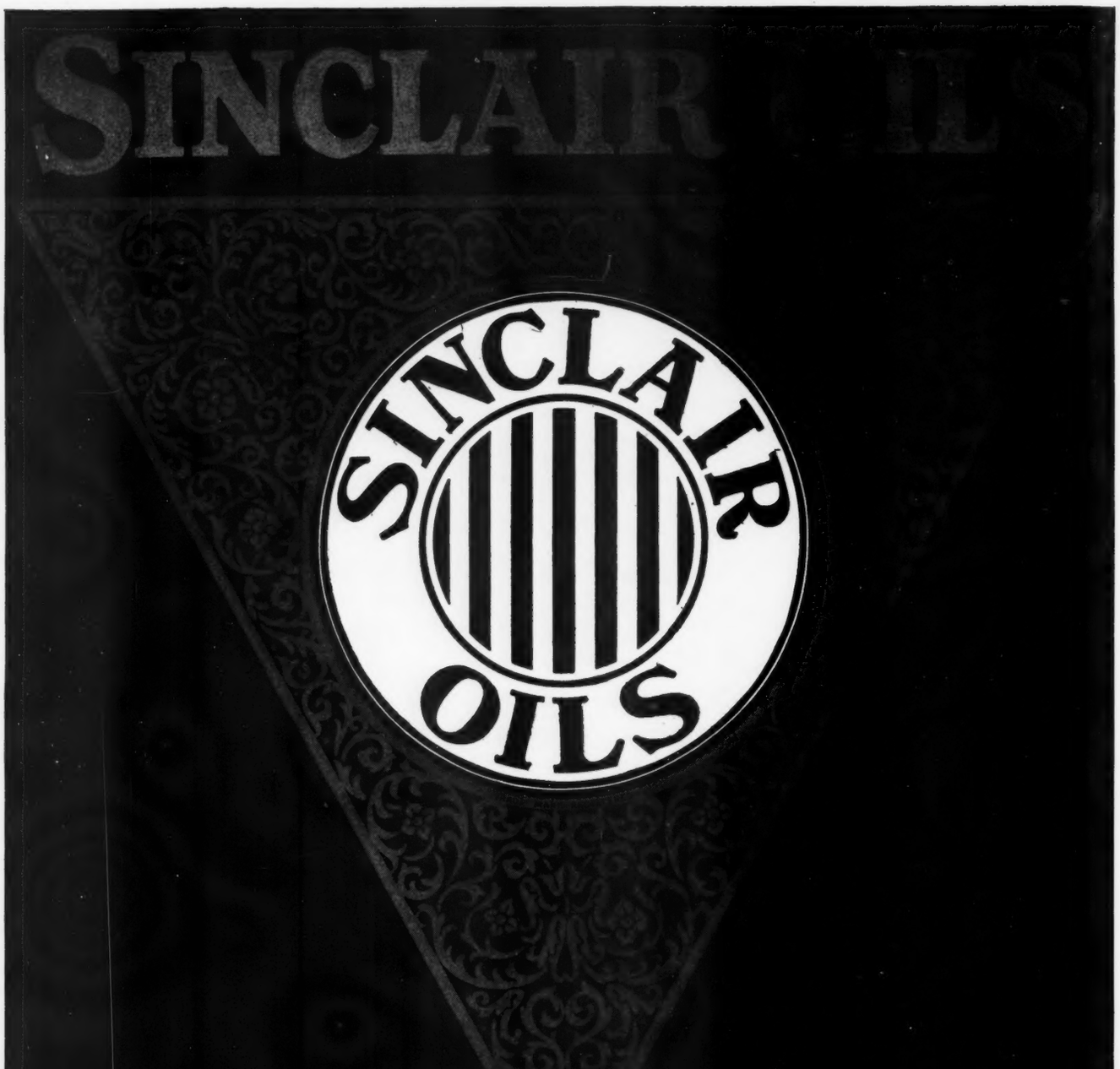
BLACKWELL, OKLA., July 25.—Patent was recently granted to George G. Cecil, of Blackwell, on device for saving wear on the bull rope on a drilling rig. It is described briefly as a clutch which disengages the tug wheel on the band wheel shaft when it is not desired to operate the bull wheels, thereby removing the necessity for having any moving parts in contact with the bull wheel when the latter is at rest.

Common practice is to cast off the bull rope from the bull wheel when the latter is to remain at rest. The bull rope, however, still resting on the tug wheel of the band wheel shaft, is in contact with the rotating tug wheel and is worn thereby.

In carrying out the invention, says Mr. Cecil in his application for patent, the tug wheel is loose on the shaft and carries a clutch member adapted to cooperate with a clutch member splined to the shaft to slide there along into and out of engagement with the first clutch member. Owing to the provision of the mechanism, the tug wheel rotates only when it is connected to the shaft by the clutch mechanism. It is therefore unnecessary to disengage the bull rope from the bull wheel, but should it be desired to because of the bull rope being in the way, the bull rope will not be worn by the tug wheel, since the latter rotates only when the clutch is thrown in.

Subheads "f" and "g" number 35, Classification "K"

	On masonry supports or on metal supports with approved protection.	On unprotected metal Supports	With combustible parts, or on supports partly or wholly of combustible construction.
f. **Still Appurtenances**, consisting of incombustible expansion chambers, reaction chambers, vaporizers, dephlegmators, condensers, etc.	$1.10	$1.70	$2.25
g. **Steam Still Condensers** and other appurtenances	.45	.65	.90



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REFINERY-TANK WAGON MARKETS

Gasoline Shipments Still Heavy; Group 3 Markets Steady

Staff Special

TULSA, July 26.

MID-CONTINENT refinery markets have been steady without important price changes of any commodity for more than a week. High gravity gasolines are selling at slight concessions but excellent demand for U. S. Motor and other standard grades has prevented them from slipping. Kerosene has been quiet and fuel oil is slightly cheaper.

A disturbing element in the market today was the announcement of a new price schedule by the Magnolia Petroleum Co. under which it will pay $1.25 per barrel for crude of 33 gravity and over in Oklahoma, Kansas and Texas. While the Magnolia cut may not be met by other major purchasers immediately or have any outstanding effect it is giving some concern today. Thus far it has made no difference in the strength of the market.

Refiners in Group 3 will watch the north Texas situation carefully during the next week, feeling that if there is to be any break in gasoline it will originate in that area. That has been the history of the market in former recessions this year.

Magnolia Not Biggest Buyer

Magnolia is not the principal purchaser of crude in north Texas. The Texas Co. is generally looked on as the leader. But a fairly large percentage of oil in the field is traded in on spot basis. Spot crude in north Texas fluctuates nearly as much as gasoline. A week ago spot oil was bought as low as $1.30 per barrel. At that figure a number of buyers entered the market and the price climbed to $1.40 per barrel before today's price cut by Magnolia.

It appears probable that spot oil buyers may seek to buy their future crude at $1.25 per barrel or less in view of the Magnolia posting. If they are able to do that the refinery market will be endangered.

Optimism in Group 3

Until today the Group 3 gasoline market has been growing stronger from day to day. Thursday and Friday a number of refiners were talking of raising their prices in U. S. Motor gasoline ¼ cent. One or two plants did raise their quotations on this grade to 8½ cents per gallon and sold a little goods at that price.

The refiners generally did not meet the higher prices but continued actively seeking business at 8 to 8¼ cents per gallon. While all of the refiners feel that a raise in price is ustified on present costs many are not willing to take any chance o flosing business to their competitors.

While not actively soliciting business on a spot basis Cosden & Co. is again willing to sell to the trade generally aside from its contract goods. The company has accepted business which has come its way all this week. Cosden's price on U. S. Motor is 8¼ cents to the trade which is well in line with the market. Its price on 56-58, 450 end-point gasoline is 8 cents which is a full half cent above the lowest prices available in the market. One large refiner is offering 56 at 7½ cents and Motor at 8 cents.

Refiners in nearly all cases are willing to sell gasoline for delivery over August. Some are quoting ¼ to ½ cent above the present spot market, believing that the expected heavy demand will force prices upwards during the peak month. One refiner this week predicted spot prices during August as high as 9½ to 10 cents per gallon.

Selling for Future

For the most part refiners are willing to sell for future delivery at about the same level they are asking for immediate shipment. U. S. Motor is available at 8 to 8¼ cents for delivery over 30 days or longer. Refiners quoting these prices appear to be expecting that the weak crude market will hold gasoline down.

Jobbers are not buying their August gasoline in advance of their requirements in great numbers. They prefer to buy what they need from day to day as long as the markets are in their present condition and no definite bull movement has made its appearance.

There was one notable exception during the week. An important jobber was in the market for around 100 cars of gasoline for prompt delivery to fill his empty tankage. The jobber was willing to accept the gasoline in trainload lots, shipments to be four days apart. It is not known what price the jobber was willing to pay or whether he has come to terms with any refiner as yet. The inquiry was considered as being auspicious by some refiners who felt that it might mark the beginning of a change in attitude on the part of the jobbing trade generally.

Current gasoline shipments are extremely heavy. Railroad freight agents report that their tonnage from refining points during July has been heavier than at any similar period in recent years. The current statistical report of the Western Petroleum Refiners Association tends to bear out the statement of the railroad men. For the first three weeks in July the association reports show gasoline shipments from 141 inland plants in the five Mid-Continent states to have been 95,163,787 gallons while in the first three weeks in June shipments were 87,474,716 gallons. The increase of July over June was 7,689,071 gallons. Two of the three weeks in July showed shipments in excess of 32,000,000 gallons while only one week in June exceeded that mark with the aid of an extensive export order.

Gasoline stocks in the Mid-Continent are not excessive at present. Stocks in the hands of the Independent group as reported to the association represent less than 30 days' supply at the current rate of consumption. Money demands and the weakness of the crude situation are the chief factors which are keeping gasoline prices down. It is believed that if Mid-Continent crude production should show signs of definitely falling off that the gasoline market would react very quickly.

High gravity gasolines have been extremely slow during the past few weeks. Recent trading has been at reductions of about ¼ cent per gallon. Close buyers are obtaining 64-66, 375 end point gasoline as low as 9¾ cents per gallon in Oklahoma although most of the refiners are quoting 10 cents. Sixty gasoline is an exception to the rule. It is scarce at 9¼ to 9½ cents per gallon.

Natural Gasoline Active

Natural gasolines have been active during the week although there has been little or no change in price. Cosden & Co. has been a generous buyer of Grade C from plants in the vicinity of Tulsa. It has been a heavy and consistent purchaser of this grade throughout the summer, aiding the market considerably.

Refiners have been placing fairly large orders for August deliveries of naturals. Manufacturers have been quoting a wide range of prices for future deliveries, depending on the condition of their storage reserves and their optimism. Most of the business which has been done, however, has been at prices closely approximating today's market.

Blended gasolines, as usual, are slow with jobbers showing little or no interest in anything except straight run commodities.

Although their stocks of kerosene have been increasing slowly from week to

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week for some time, refiners appear not to be anxious enough to move any of their surplus to cut their prices. Now and then a broker announces proudly that he has bought a car of 41-43 at 3⅞ cents per gallon. It usually turns out, however, that the car did not contain treated goods. The bulk of the 41-43 being sold is bringing 4 to 4½ cents per gallon. Some 42-44 has sold as low as 4¼ cents but it is usually bringing 4⅜ to 4½ cents.

Some distillate for winter home heating is being stocked by jobbers from week to week but the market is still far from active and many refiners have not begun to cut the commodity yet for the winter trade. A satisfactory basis for contracts is being sought by refiner and jobber alike. Thus far a flat price over the winter or market date of shipment appears to be about the only acceptable basis for contracting.

In spite of recent drastic price reductions the movement of all grades of lubricating oils except brights and a few others for motor blending purposes, is not satisfactory. Stocks of steam refined oils were benefited by the large export order mentioned in these columns last week but no such windfall has come to neutrals.

Industrial users of lubricating oils are not making as heavy demands on the refiner as they normally do. Waxes are stronger again as a number of buyers have been looking for August goods. Sales have been made this week at 4 to 4⅛ cents per pound.

Gas oil is strong and rather scarce. The Atlantic Refining Co. is proving to be a good buyer of this commodity for export and coastwise movement. It is understood that the Atlantic now has an open offer of 2⅝ cents per gallon for gas oil. Any refiner needing to sell a few cars knows where to go if he is willing to accept the price. Not many sales are being made at more than 2¾ cents per gallon.

At this time of year it is to be expected that fuel oil will be slow. Movement this month has been a little below the level of production and concessions in price are granted here and there by a few refiners. The low price this week has been 75 cents per barrel, a reduction of 2½ cents per barrel over last week. Much of the fuel is still bringing 80 cents and better.

One more month of slow business on fuel oil is to be expected by refiners. After that the early fall trade will pick up rapidly. With railroads steady all-year buyers the seasonal variation in demand for fuel is becoming less and less apparent. Fuel oil stocks in the Mid-Continent are still far smaller than gasoline stocks and are likely to remain so even through August when the greatest drain should be felt on gasoline reserves.

Mid-Continent Refinery Operations Week Ended July 19

TULSA, July 26.—Stocks of gasoline at 141 refineries in the Mid-Continent field with a still capacity of 498,850 barrels of crude per day have been reduced in excess of 20,000,000 gallons during the past two months, according to statistical reports of the Western Petroleum Refiners Association.

On May 17, the association's report covering activities of 138 plants with a still capacity of 481,850 barrels showed gasoline stocks to be 145,127,101 gallons. Since that time three refineries with a capacity of 17,000 barrels of crude per day have begun submitting reports to the association. In spite of this increase in the number of plants reporting total gasoline stocks at all plants on July 19, were 124,855,867 gallons a decrease of 14 per cent over the May figure. It is probable that if the report covered identical plants at both dates the reduction would be even greater. It will be remembered that one 15,000 barrel plant in Kansas brought more than 3,000,000 gallons of gasoline into the stock figures for that state when it began reporting.

For the week ending July 19, stocks of gasoline made virtually their biggest decline in the year, being reduced 5,378,135 gallons. Shipments of 32,623,056 gallons were 19.7 per cent greater than production for the week of 27,244,921 gallons.

The 62 refineries reporting in Oklahoma showed the heaviest shipments as compared with production. Production in Oklahoma for the week was 14,135,062 gallons and shipments 18,430,036 gallons reducing stocks 4,294,974 gallons to 94,156,483 gallons. Kansas stocks were reduced a half million gallons while Texas plants reported virtually no changes in their reserves.

Charges of crude and rerun oils to stills of all plants were reduced 4700 barrels per day during the week to a daily average of 262,214 barrels per day or 52 per cent of the rated capacity of the plants. Kansas plants were the only ones to increase runs, the change in that state being less than 1000 barrels per day. In Oklahoma runs were cut 3300 barrels per day, in Texas 1700 barrels and in Louisiana and Arkansas 450 barrels per day.

Shipments of kerosene were much lighter during the week ending July 19, than in the previous week falling off 962,469 gallons to 5,426,179 gallons. Refineries in Arkansas and Louisiana were the only ones able to reduce their stocks. Production for the week was 6,907,120 gallons bringing stocks at the end of the week up to 22,744,574 gallons.

Stocks of fuel and gas oil likewise continued their gradual, steady increase in all fields except Louisiana and Arkansas. For the district as a whole stocks increased 3,274,671 gallons to 105,905,620 gallons. Production for the week was 33,027,873 gallons and shipments 29,753,202 gallons.

Summary Western Petroleum Refiners Report, Week Ending July 19, 1924

	KANSAS	%Change over previous week	OKLAHOMA	%Change over previous week	TEXAS	%Change over previous week	N.LA.-ARK.	%Change over previous week	TOTAL July 19	%Change over previous week	TOTAL June 21
Plants	27		62		42		10		141		141
Capacity (bbls.)	102,600		265,700		105,550		25,000		498,850		498,850
Aver. daily still charges, wk. 7-12.	55,678		139,127		57,397		14,755		266,957		
Aver. daily still charges, wk. 7-19.	56,320	+ 1.15	135,945	— 2.29	55,645	— 3.05	14,304	— 3.06	262,214	— 1.78	274,346
GASOLINE (Gals.)											
Stocks, 7-12	15,163,121		98,451,457		15,524,456		1,094,968		130,234,002		139,690,404
Prod., 7-12—7-19	6,532,042	+ 4.15	14,135,062	— 9.28	5,651,226	— 7.40	926,591	— 4.94	27,244,921	— 5.83	28,157,105
Sales, 7-12—7-19	7,193,531	— 1.83	18,430,036	— 1.74	5,724,981	+ 0.72	1,274,508	+23.70	32,623,056	— 0.53	28,749,607
Stocks, 7-19	14,501,532	— 4.36	94,156,483	— 4.36	15,450,701	— 0.48	747,051	—31.77	124,855,867	— 4.13	139,097,902
Ratio Sales to Prod	110.1%		130.4%		101.3%		137.5%		119.7%		102.1%
KEROSENE (Gals.)											
Stocks, 7-12	4,259,756		11,940,880		4,927,575		135,422		21,263,633		20,654,601
Prod., 7-12—7-19	1,624,776	—15.51	3,786,433	+21.02	1,192,451	+ 0.01	303,460	— 4.60	6,907,120	+ 5.25	5,906,578
Sales, 7-12—7-19	1,293,609	—26.43	2,685,758	—13.37	1,131,906	— 8.95	314,906	+ 9.66	5,426,179	—15.07	6,113,406
Stocks, 7-19	4,590,923	+ 7.77	13,041,555	+ 9.22	4,988,120	+ 1.23	123,976	— 8.46	22,744,574	+ 6.96	20,447,773
Ratio Sales to Prod	79.6%		70.9%		94.9%		103.8%		78.6%		103.5%
GAS AND FUEL OIL (Gals.)											
Stocks, 7-12	11,303,851		73,881,006		13,974,179		3,471,913		102,630,949		101,599,230
Prod., 7-12—7-19	7,500,182	+ 6.32	15,353,973	+ 0.33	8,255,969	+10.67	1,917,749	— 4.82	33,027,873	+ 3.75	35,830,022
Sales, 7-12—7-19	6,367,589	—23.84	13,511,885	— 1.40	7,933,065	—10.79	1,940,663	—14.45	29,753,202	—10.45	33,754,036
Stocks, 7-19	12,436,444	+10.02	75,723,094	+ 2.49	14,297,083	+ 2.31	3,448,999	— 0.66	105,905,620	+ 3.19	103,675,216
Ratio Sales to Prod	84.9%		88.0%		96.1%		101.2%		90.1%		94.2%

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Prices in effect July 28

S. O. NEW JERSEY TERRITORY

	Gasoline			Oil	
	T.W.	Tax	Total	S.S.	T.W.
Atlantic City, N.J.	17.5	0	17.5	*	13
Newark, N. J.	17.5	0	17.5	*	13
Annapolis, Md.	17	2	19	*	12.5
Baltimore, Md.	17	2	19	22	11
Cumberland, Md.	17	2	19	22	12.5
Washington, D.C.	17	2	19	21	12.5
Danville, Va.	17.5	3	20.5	*	13.5
Norfolk, Va.	17.5	3	20.5	22.5	13.5
Richmond, Va.	17.5	3	20.5	23.5	13.5
Roanoke, Va.	17.5	3	20.5	22.5	13.5
Petersburg, Va.	17.5	3	20.5	*	13.5
Charleston, W.Va.	17	2	19	22	13.5
Clarksburg, W.Va.	17	2	19	21	13.5
Keyser, W.Va.	17	2	19	*	13.5
Parkersburg, W.Va.	17	2	19	21	13.5
Wheeling, W.Va.	17	2	19	22	13.5
Williamson, W.Va.	17	2	19	*	13.5
Charlotte, N.C.	17	3	20	23	13.5
Hickory, N.C.	17	3	20	*	13.5
High Point, N.C.	17	3	20	*	13.5
Mt. Airy, N.C.	17	3	20	*	13.5
Salisbury, N.C.	17	3	20	*	13.5
Charleston, S.C.	17.5	3	20.5	23.5	14
Columbia, S.C.	17.5	3	20.5	22.5	14

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK TERRITORY

*New York City	19	0	19	21.5	13
Albany, N. Y.	16	0	16	18	13
Buffalo, N. Y.	16	0	16	19	13
Rochester, N. Y.	15	0	15	19	13
Syracuse, N. Y.	16	0	16	18.5	12
Boston, Mass.	19	0	19	21.5	12
Augusta, Me.	19	1	20	22.5	13
Manchester, N.H.	19	2	21	23.5	13
Burlington, Vt.	19	1	20	22.5	13

*In steel barrels.

ATLANTIC REFINING TERRITORY

Pittsburgh, Pa.	19	0	19	24*	14
Philadelphia, Pa.	19	0	19	24*	14
Allentown, Pa.	19	0	19	24*	14
Scranton, Pa.	19	0	19	24*	14
Altoona, Pa.	19	0	19	24*	14
Dover, Del.	19	2	21	24	14
Wilmington, Del.	19	2	21	24	14
Providence, R. I.	20	0	20	23	14
Springfield, Mass.	20	0	20	23	14
Worcester, Mass.	20	0	20	23	14
Hartford, Conn.	20	1	21	24	14
New Haven, Conn.	20	1	21	24	14
Boston, Mass.	20	0	20	23	14

*Contains 2-cent tax collected by retail dealer and paid by him directly to state.

S. O. OHIO TERRITORY

All Ohio points	17	0	17	19	14

S. O. KENTUCKY TERRITORY

Lexington, Ky.	18	3	21	23	15
Louisville, Ky.	13	3	16	18	14
Covington, Ky.	17	3	20	22	15
Clarksdale, Miss.	16	3	19	22	14
Jackson, Miss.	16	3	19	22	10
Natchez, Miss.	15.5	3	18.5	21.5	13.5
Vicksburg, Miss.	15.5	3	18.5	21.5	13.5
Birmingham, Ala.	18	2	20	22	15.5
Mobile, Ala.	17	2	19	21	13.5
Montgomery, Ala*	19	2	21	23	16.5
Atlanta, Ga.	17	3	20	24	14
Augusta, Ga.	19	3	22	24	14.5
Macon, Ga.	19	3	22	24	15.5
Savannah, Ga.	15	3	18	20	14
Jacksonville, Fla.	17	3	20	22	14
Miami, Fla.	19	3	22	24	15.5
Tampa, Fla.	17	3	20	22	14
Pensacola, Fla.	17	3	20	22	14.5

*Local privilege Tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included.

S. O. CALIFORNIA TERRITORY

Phoenix, Ariz.	20	3	23	26	21.5
Los Angeles, Cal.	14	2	16	19	15.5
Fresno, Cal.	15.5	2	17.5	20.5	17.5
San Francisco, Cal.	15	2	17	20	15.5
Reno, Nev.	18.5	2	20.5	23.5	19
Portland, Ore.	16	3	19	22	16.5
Seattle, Wash.	16	2	18	21	16.5
Spokane, Wash.	20	2	22	25	20.5
Tacoma, Wash.	16	2	18	21	16.5

S. O. LOUISIANA TERRITORY

	Gasoline			Oil	
	T.W.	Tax	Total	S.S.	T.W.
Camden, Ark.	16	4	20	22	13
Little Rock, Ark.	16	4	20	22	13
West Helena, Ark.	16	4	20	22	13
Alexandria, La.	14.5	1	15.5	19.5	13
Baton Rouge, La.	14	1	15	18	11.5
Lake Charles, La.	15.5	1	16.5	19.5	13
New Orleans, La.	13.5	1	14.5	17.5	9
Shreveport, La.	15.5	1	16.5	19.5	13
Bristol, Tenn.	18	2	20	22	13.5
Chattanooga, Tenn.	16.5	2	18.5	20.5	14.5
Knoxville, Tenn.	17.5	2	19.5	21.5	15
Nashville, Tenn.	16.5	2	18.5	20.5	13.5
Memphis, Tenn.	14	2	16	18	14

MAGNOLIA PETROLEUM TERRITORY

Muskogee, Okla.	13.5	2½	16	21	11
Oklahoma City	13	2½	15.5	21.5	11
Tulsa, Okla.	10.5	2½	13	18	11
Fort Smith, Ark.	13	4	17	20	12
Little Rock, Ark.	16	4	20	23	13
Texarkana, Ark.	15	4	19	22	12
Dallas, Tex.	13	1	14	18	10
El Paso, Tex.	11	1	12	14	12
Fort Worth, Tex.	13	1	14	17	11
Houston, Tex.	15	1	16	19	12
San Antonio, Tex.	13	1	14	17	10

S. O. INDIANA TERRITORY

Chicago, Ill.	†15.25	0	†15.25	19	12
Decatur, Ill.	17.2	0	17.2	19.2	12.5
East St. Louis, Ill.	16.1	0	16.1	18.35	11.6
Joliet, Ill.	17.4	0	17.4	19.4	12.7
Peoria, Ill.	17.2	0	17.2	19.2	12.5
Quincy, Ill.	17.2	0	17.2	19.2	12.3
Evansville, Ind.	17	2	19	21	12.5
Indianapolis, Ind.	17.2	2	19.2	21.2	12.7
South Bend, Ind.	17.4	2	19.4	21.4	12.9
Detroit, Mich.	17.8	0	17.8	19.8	13.2
Grand Rapids, Mich.	17.7	0	17.7	19.7	13.1
Saginaw, Mich.	17.9	0	17.9	19.9	13.3
La Crosse, Wis.	18.2	0	18.2	20.2	13.4
Madison, Wis.	17.3	0	17.3	19.3	12.5
Milwaukee, Wis.	16.1	0	16.1	19.1	12.2
Duluth, Minn.	18.2	0	18.2	20.2	13.6
Mankato, Minn.	16.8	0	16.8	18.8	12.4
Minneapolis, Minn.	12	0	12	16	13.6
Davenport, Ia.	15.5	0	15.5	20.5	12.9
Des Moines, Ia.	17.5	0	17.5	20.5	12.9
Sioux City, Ia.	16	0	16	18	12.5
Kansas City, Mo*	11.9	1	12.9	20.9	11.3
St. Joseph, Mo*	17.5	½	18	20	11.9
St. Louis, Mo.*	15.1	½	15.6	18.9	12
Fargo, N. D.	18.6	1	19.6	21.6	15.6
Grand Forks, N.D.	20.2	1	22.2	24.2	15.9
Minot, N. D.	20.9	1	21.9	23.9	15.6
Huron, S. D.	20	2	22	24	14.1
Pierre, S. D.	20	2	22	24	14.1
Wichita, Kan.	16.8	0	16.8	18.8	11.8
Bartlesville, Okla.	16.9	2½	19.4	21.4	10.9

*Taxes levied by cities.
†Dumps less than 100 gallons at 17c Tank wagon.

S. O. NEBRASKA TERRITORY

Crawford, Neb.	18	0	18	*	13.25
Omaha, Neb.	13	0	13	15	12.5
McCook	16.75	0	16.75	18.75	14
Norfolk	16.75	0	16.75	18.75	13
North Platte	16	0	16	18	13.75
Scotts Bluff	18.25	0	18.25	20.25	13.2

*Standard has no service station here.

CONTINENTAL OIL TERRITORY

Denver, Colo.	17	2	19	21	13.5
Glenwood Sp'gs, Colo.	22	2	23	*	14.5
Pueblo, Colo.	17	2	19	21	14.5
Basin, Wyo.	19	1	20	*	14
Casper, Wyo.	17	1	18	20	12
Cheyenne, Wyo.	18.5	1	19.5	21.5	13.5
Cody, Wyo.	20	1	21	*	15
Lander, Wyo.	19	1	20	*	14
Sheridan, Wyo.	21	1	22	24	16
Billings, Mont.	19.5	2	21.5	23.5	14.5
Butte, Mont.	21	2	23	25	15
Great Falls, Mont.	21	2	23	25	16
Helena, Mont.	21	2	23	25	16
Miles City, Mont.	20.5	2	22.5	24.5	15.5
Missoula, Mont.	22	2	24	26	17
Ogden, Utah	21.5	2½	24	26	17.5
Salt Lake City, Utah	21.5	2½	24	26	17.5
Boise, Ida.	22.5	2	24.5	26.5	20
Idaho Falls, Ida.	23		25	27	19.5
Albuquerque, N.M.	20	1	21	23	16.5

*Continental has no service stations at these points.

Week's Price Changes Tank Wagon Markets

Gasoline Reductions

Standard of New York—T.w. and s.s. 2 cents, Rochester, July 23. T. w. 1 cent, to 14 cents, Schenectady, July 25.
Standard of Ohio—T.w. and s.s. 2 cents, thru Ohio, July 23.

* * *

Kerosene Reductions

Standard of New York—1 cent thru New York and New England, July 22.
Standard of Ohio—1 cent thru Ohio, July 23.

Develops Something New In Road Maps

GREEN BAY, WIS., July 28.—S. D. Hastings Jr., head of the Barkhausen Oil Co., has recently procured for popular distribution a road map of Wisconsin which he states is the most complete one ever published. It is a 48-page book, each page being a double. The leaves of the book are actually only 16 in number and they are 9 x 10 inches so when folded the whole affair will fit inside a No. 10 envelope. In outward appearance the book looks like a fancy railroad folder.

The book contains 21 maps. It has two pages of attractive pictures. One is of winter scenes and the other of summer scenes in Wisconsin's remarkable out-of-doors. The book carries all the descriptive matter any motorist might need to get him from place to place over Wisconsin's well marked roads. In the back are three pages of advertisements for popular Wisconsin summer resorts. The cover is an unusually ornate affair, printed in three colors and carrying the Barkhausen Oil Co.'s advertisement.

"Profit Sharing" Station

ST. JOSEPH, MO., July 26.—A "profit sharing" filling station has been opened here by the J. G. Ranger Oil Co. Gasoline coupon books are being sold for $10 and every purchaser of a book is entitled to receive a share of the profits of the business by the month. No definite earnings are promised or guaranteed, however, but dividends are to be prorated according to the number of coupon book covers turned in by the customer. Thus, a customer who turns in two book covers will receive twice as much in dividends as the one turning in only one cover.

The company maintains an underground storage tank to hold two carloads, near a side track where its filling station is located, thus having no transportation cost. It operates but the one station and seems to be doing a good business, according to one of the local Independent oil companies.

BETHEL, ME., July 28.—Irving L. Carver, distributor for the Valvoline Oil Co., has found it necessary due to increasing business, to add two 10,000 gallon tanks to his plant here.

Refinery Markets On Light Oil Products

Pennsylvania, Oklahoma, North and South Texas, Louisiana, Arkansas

GASOLINE AND NAPTHA

PENNSYLVANIA	Prices July 28	Prices July 21	Prices July 14
52-54 Naptha	11½-12	11¾-12	-12
54 Naptha	12 -12¼	12¼-12½	12 -12¼
58-60 Gasoline	12¼-12½	12¾-12½	12 -12½
60 Straight-run gasoline	13¼-13¾	13 -13½	12¾-13½
62 Straight-run gasoline	13½-14	13½-14	14 -14½
64 Straight-run gasoline	14 -14½	14 -14½	14½-15
68 Straight-run gasoline	16¼-16½	16 -16½	16½-17
68-70 Blend, 450 E. P.	11¼-11½	11¼-11½	11¼-11½
60-62 Blend, 450 E. P.	11¼-11½	11¼-11½	11¼-11½
62-64 Blend, 450 E. P.	11¼-11½	11¼-11½	11¼-11½
66-68 Blend, 440 E. P.	11½-11¾	11½-11¾	11½-11¾
68-70 Blend, 440 E. P.	11½-11¾	11½-11¾	11½-11¾
68-70 Blend, 420 E. P.	11¾-12¼	11¾-12¼	11¾-12¼
OKLAHOMA			
48-50 450 E. P. naptha	7½- 7¾	7½- 7¾	8 - 8¼
50-52 450 E. P. naptha	7½- 7¾	7½- 7¾	8 - 8¼
56-58 450 E. P. gasoline	7½- 8	7½- 8	8 - 8¼
58-60 U. S. Motor 437E.P.131i.b.p	8 - 8¼	8 - 8¼	8¼- 8¾
60-62 400 E. P. gasoline	9¼- 9½	9¼- 9½	10 -10¼
64-66 375 E. P. gasoline	9¾-10¼	10 -10½	10½-10¾
68-70 350 E. P. gasoline	10½-10¾	10¾-10¾	11 -11¼
NORTH TEXAS			
48-52 450 E. P. naptha	7½- 7¾	7¾- 8	8 - 8¼
56-58 450 E. P. gasoline	7¾- 8	7¾- 8	8 - 8¼
56-58 U. S. Motor gasoline	7¾- 8	7¾- 8	8¼- 8½
58-60 U. S. Motor gasoline	8 - 8¼	8 - 8¼	8¾- 8¾
60-62 400 E. P. gasoline	8¾- 9	9 - 9¼	9¾-10
64-66 390 E. P. gasoline	9½- 9¾	9¾-10	10 -10¼
64-66 375 E. P. gasoline	9¾-10	10 -10¼	10¼-10½
68-70 350 E. P. gasoline	10¼-10½	10½-11	10¾-11¼
NORTH LOUISIANA			
58-60 450 E. P. gasoline	8¼- 8½	8 - 8¼	8¾- 9
58-60 437 Navy Gasoline	8½- 8¾	8¼- 8½	9 - 9¼
64-66 390-400 E. P. Gasoline	10 -10¼	10 -10¼	10¾-11
ARKANSAS			
58-60 450 E. P. gasoline	8¾- 8½	8¼- 8½	8⅞- 9⅛
58-60 Navy gasoline	8½- 8¾	8½- 8¾	9 - 9⅛
64-66 375 E. P. gasoline	10 -10¼	10 -10¼	10¼-10½

NATURAL GASOLINE

OKLAHOMA	Prices July 28	Prices July 21	Prices July 14
Grade A, 73-78 375 E.P.,90% Rec.	7¼- 7½	7¼- 7½	7½- 7¾
Grade B, 76-82 375 E.P.,85% Rec.	7 - 7¼	7 - 7¼	7¼- 7½
Grade C, 80-88 350 E.P.,78% Rec.	- 7	- 6¾	7 - 7¼
Grade D, 88-92 350 E. P.	- 7	- 6¾	7 - 7¼

(Motor Natural Gasoline—Blends)

OKLAHOMA	Prices July 28	Prices July 21	Prices July 14
Grade 1, 58-62 437 E.P.,91% Rec.	7⅛- 7¼	7¼- 8	8 - 8¼
Grade 2, 58-62 450 E.P.,90% Rec.	7⅛- 7¼	7¼- 8	8 - 8¼
Grade 3, 66-64 440 E.P.,88% Rec.	7⅛- 7¼	7¼- 8	8 - 8¼
Grade 4, 66-70 435 E.P.,85% Rec.	7⅛- 7¼	7¼- 8	8 - 8¼
NORTH TEXAS			
Grade A, 72-78 90% Rec*	7¼- 7½	7¼- 7⅛	7⅛- 7¼
Grade B, 76-82 85% Rec*	7 - 7¼	7 - 7⅛	7¼- 7½
Grade C, 80-88 78% rec	6¾- 7	- 6¾	7 - 7¼

*F. O. B. Breckinridge

(Motor Natural Gasoline—Blends)

Grade 1, 58-62 437 E. P.	7½- 7¾	7¾- 8	8 - 8¼
Grade 2, 58-62 450 E. P.	7½- 7¾	7¾- 8	8 - 8¼

BURNING OILS

PENNSYLVANIA			
45 Water White	6 - 6¼	- 6¼	6 - 6¼
46 Water White	6¼- 6¾	7 - 7¼	6½- 6¾
47 Water White	7¼- 7½	- 7¼	7 - 7½
300 Burning Oil	6¾- 7	6¾- 7	- 7
OKLAHOMA			
40-42 Prime White Dist.	3¾- 4	3¾- 4	3½- 3¾
41-43 Water White	4 - 4¼	4 - 4¼	4 - 4¼
42-44 Water White	4¼- 4½	4¾- 4½	4⅜- 4⅝
NORTH TEXAS			
40-42 Prime White Distillate	3¾- 4	3¾- 4	3½- 3¾
41-43 Water White Kerosene	4 - 4¼	4 - 4¼	4 - 4¼
42-44 Water White Kerosene	4⅜- 4⅝	4¼- 4⅝	4¼- 4½
NORTH LOUISIANA			
41-43 Water White Kerosene	4¼- 4½	4½- 4¾	4¼- 5
ARKANSAS			
41-43 Water White Kerosene	4½- 4¾	4½- 4¾	4½- 4¾
42-44 Water White Kerosene	4¾- 5	4¾- 5	4¾- 5

Above prices are f. o. b. refinery in tank car. They are the prices at which the bulk of the products on the open market move. Whoever has knowledge of any open market prices on any considerable quantity of goods differing from the foregoing, will favor us with this information.

Gasoline Demand Slow At Chicago And Price Is Slipping

CHICAGO, July 26.—The demand for gasoline is slow and the price is slipping under the weight of supply. The prevailing quotation to the trade is 8 cents a gallon and jobbers are paying it under some circumstances, but some of them consider it merely a first asking price. If the refiner's quotation is unyielding and the jobber is standardizing on that refiner's goods, then 8 cents is the price. If cars on the rail are scarce and the jobber is in distress for material 8 cents is a good price; even 8¼ has been paid a number of times. But there are those who sell gasoline for less.

Toward the latter end of every month the Greenslade Oil Co. of Detroit comes into the market for a train load of material and buys on specification from the lowest bidder. This monthly transaction is the biggest one almost any month. It is undoubtedly the biggest deal that is turned in Chicago with any degree of regularity. So the oil men in this vicinity are accustomed to watch the Greenslade affair because it "blows the froth off the market structure," so to speak, and gives everybody a look at the bottom price before starting a new month's business. This week Greenslade bought a trainload of U. S. Motor gasoline at 7¾ cents.

The Greenslade transaction was handled through a broker. It usually is for that matter—but not often the same broker twice in succession. That means that some refiner must have turned loose that train load of U. S. Motor at something like 7½ cents. Sales by refiners to brokers for 7¾ this week have been numerous. Some of the larger interests are said to be selling their Independent distributors at the same price on open quotation. There is a rumor afloat that certain smaller refiners have continued to quote U. S. Motor at 8 cents and 56-58 at 7¾ cents.

Kerosene is a little better price this week than last. The bottom quotation of 4 cents on 41-43 is seldom heard. Harvest demand, along with summer kitchen consumption and road work have improved the volume and firmed up the price to 4¼ cents.

Marketers say they can buy distillate for domestic fuel in Group 3 at 3 cents. Nobody here is offering it to the trade in small quantities under 3¼ and some are asking 3½. Still jobbers are indisposed to offer more than 3½ on contract.

As far as can be learned 24-26 refinery fuel is not sold under 75 cents a barrel but little appears to have moved at 80 cents this week. Nevertheless fuel marketers are hopeful of the winter and are staying out of the market as much as possible. Winter demand for heating, possible industrial revival and likely curtailed refinery runs, persuade them that now is the time to buy and hold for winter.

Another bullish piece of news is that Smackover crude fuel probably will not be in the Chicago market to any great extent this fall. The posted price of 60 cents at the well today makes it sell here on a par with 24-26 with freight rates in Chicago's favor, but that situation is changing. On June 25 a 14-cent rate from Smackover to New Orleans for bunker fuel became effective. Already 150 cars a day are moving that way, exclusive of pipe line shipments. On Aug. 18 the same rate will become effective for domestic shipments. That will virtually exclude Smackover from the industrial centers of the north.

Refinery Markets On Lubricants, Heavy Oils

Pennsylvania, Oklahoma, North and South Texas, Louisiana, Arkansas

NEUTRAL OILS

PENNSYLVANIA	Prices July 28	Prices July 21	Prices July 14
(Viscous Test 70)			
220 Vis. No. 3 Asso. Filt.	.25 -26	25½-26	-25
200 Vis. No. 3 Assoc. Filt.	.22 -23	22½-23	22½-23
180 Vis. No. 3 Assoc. Filt.	.20 -21	21 -21½	21 -21½
150 Vis. No. 3 Assoc. Filt.	.19 -20	18½-19½	19 -19½
(Non-Viscous			
34 350-360 Flash.	7 - 7½	7 - 7½	7 - 7½
36 Miners Neutrals 300-305 Flash.	6½- 7	6½- 7	6 - 6½
OKLAHOMA			
(Viscous Test 100)			
70 Vis. at 100°F.No.2½-3 color.	4½- 4¾	4½- 4¾	4½- 4¾
100 Vis. at 100°F.No.2 color.	5½- 5½	5¼- 5½	5¼- 5½
100 Vis. at 100°F.No.2½-3 color.	4¾- 5	4¾- 5	5 - 5¼
150 Vis. at 100°F.No.3 color.	8¾- 9	8¾- 9	8¾- 9
150 Vis. at 100°F.No.4 color.	8¼- 8½	8¼- 8½	8¼- 8½
180 Vis. at 100°F.No.3 color.	9¾-10	9¾-10	9¾-10
180 Vis. at 100°F.No.4 color.	9¼- 9½	9¼- 9½	9¼- 9½
180 Vis. at 100°F.No.5 color.	8¾- 9	8¾- 9	8¾- 9
180 Vis. at 100°F.No.6 color.	8¼- 8½	8¼- 8½	8¼- 8½
200 Vis. at 100°F.No.3 color.	11¾-12	11¾-12	11¾-12
200 Vis. at 100°F.No.4 color.	11¼-13½	11¼-11½	11¼-11½
200 Vis. at 100°F.No.5 color.	10¾-11	10¾-11	10¾-11
200 Vis. at 100°F.No.6 color.	10¼-10½	10¼-10½	10¼-10½
220 Vis. at 100°F.No.3 color.	12¾-13	12¾-13	12¾-13
220 Vis. at 100°F.No.4 color.	12 -12¼	12 -12¼	12 -12¼
220 Vis. at 100°F.No.5 color.	11¼-11½	11¼-11½	11¼-11½
220 Vis. at 100°F.No.6 color.	11 -11¼	11 -11¼	11 -11¼
240 Vis. at 100°F.No.3 color.	14¾-15	14¾-15	14¾-15
240 Vis. at 100°F.No.4 color.	14¼-14½	14¼-14½	14¼-14½
240 Vis. at 100°F. No.5 color.	13¼-13½	13¼-13½	13¼-13½
240 Vis. at 100°F.No.6 color.	13 -13¼	13 -13¼	13 -13¼
280 Vis. at 100°F. No.3 color.	16¾-17	16¾-17	16¾-17
280 Vis. at 100°F.No.4 color.	15¾-16	15¾-16	15¾-16
280 Vis. at 100°F. No.5 color.	14¾-15	14¾-15	14¾-15
280 Vis. at 100°F.No.6 color.	13¾-14	13¾-14	13¾-14
300 Vis. at 100°F.No.6 color.	17½-18	17½-18	17¼-17½
SOUTH TEXAS			
(Viscous Test 100; cold test 0)			
100 Vis. No.2 Color Unfilt.Pale.	8½- 9½	8½- 9½	9½-10½
150 Vis. No.2½ Color Unfilt.Pale.	10½-11½	10½-11½	11½-12½
200 Vis. No.3 Color Unfilt.Pale.	13 -14	13 -14	14 -15
300 Vis. No.3 Color Unfilt.Pale.	15 -16	15 -16	16 -17
500 Vis. No.3½ Color Unfilt.Pale.	17 -18	17 -18	18 -19
750 Vis. No.4 Color Unfilt.Pale.	22½-23½	23 -24	23½-24½
200 Vis. No. 2 Filt. Pale.	23 -24	23 -24	24 -25
300 Vis. No. 2 Color Filt. Pale.	26 -27	26 -27	23½-24
500 Vis. No. 2½ Color Filt. Pale.	30 -30½	30 -30½	30 -30½
750 Vis. No.2½ Color Filt. Pale.	40 -40½	40 -40½	40 -40½
200 Vis. No. 5½ Color Red Oil.	11 -12	11½-12½	13 -14
300 Vis. No. 5½ Color Red Oil.	13 -14	13½-14½	14½-15½
500 Vis. No. 6 Color Red Oil.	15 -16	15 -16	16½-17½
750 Vis. No. 6 Color Red Oil.	20 -21	20½-21½	21½-22½

Above prices are f. o. b. refinery in tank car. They are the prices at which the bulk of the products on the open market move. Whoever has knowledge of any open market prices on any considerable quantity of goods differing from the foregoing, will favor us with this information.

CYLINDER STOCKS

PENNSYLVANIA	Prices July 28	Prices July 21	Prices July 14
600 Steam Refined.	-17½	17½-18	-18
635 Steam Refined.	22 -23	22 -23	22 -23
650 Steam Refined.	23 -24	-24	23 -24
600 Flash.	-27	27 -28	-27
600 Warren E.	-22	-22½	-22½
600 Oil City E.	-20½	-21½	-21½
600 Filtered D.	-27	27 -27½	27½-27½
Cold Test Stocks (bright filtered).	34 -35	34 -36	35 -37
Cold Test Stock (dark filtered).	32 -34	32 -34	33 -35
Black Oil.	- 7	- 7	- 7
OKLAHOMA			
190-200 Vis. at210 Bright Stock.	29 -34	-	-
150-160 Vis. at 210 Bright Stock.	26 -30	-	-
Medium Filtered Stock.	16 -17	17 -18	20 -20½
600 Steam Refined Olive Green.	7 - 7½	7¼- 7¾	7¼- 7¾
600 Steam Refined Dark Green.	6 - 6½	6 - 7	6 - 7
Black Oil.	4¼- 4½	4¼- 4½	4¼- 4½

WAX

PENNSYLVANIA			
(Per Pound New York)			
122-124 White Crude Scale.	4½- 4¾	4½- 4¾	- 4¾
124-126 White Crude Scale.	4½- 4¾	4½- 4¾	- 4½
OKLAHOMA			
(Per Pound Group 3)			
124-126 White Crude Scale.	4 - 4¼	3¾- 4	3¾- 4

FUEL OIL

PENNSYLVANIA			
36-40 Fuel Oil.	5⅜- 5¼	5 - 5⅜	5 - 5¼
30-34 Fuel Oil.	5 - 5⅛	5 - 5⅛	5 - 5⅛
OKLAHOMA			
40-42 Prima WhiteDist.	3¾- 4		
38-40 Straw Distillate.	3⅛- 3⅜	4 - 4¼	3¼- 3½
36-38 Straw Distillate.	3 - 3⅛	4¼- 4½	3 - 3¼
32-36 Gas Oil (Gal.).	2⅝- 2¾	2⅝- 2⅞	2⅝- 2⅞
24-26 Fuel Oil (bbl.).	.75- .80	77½-.82½	.80- .85
Fuel Oil, buyers, cars (bbl.).	.75- .80	77½-.82½	.80- .85
20-22 Fuel Buyers.	.72½-77½	.75- .80	77½- .82½
40-50 Asphalt Content Road Oil.	.90- .95	.90- .95	.90- .95
50-60 Asphalt Content Road Oil.	.95-1.00	.95-1.00	.95-1.00
60-70 Asphalt Content Road Oil.	1.00-1.10	1.00-1.10	1.00-1.10
NORTH TEXAS			
38-40 Straw Distillate.	3 - 3¼	3 - 3¼	3 - 3¼
32-36 Gas Oil (gal.).	2½ 2¾	2⅝- 2⅞	2⅝- 2⅞
24-26 Fuel, per bbl.	77½- .80	77½- .85	.80- .90
South Texas Fuel.	1.60-1 70	1.40-1.50	1.60-1.75
South Texas Gas Oil.	4 -4½	4 - 4½	4¼- 4½
NORTH LOUISIANA			
32-36 Gas Oil (Gal.).	3 - 3¼	3 - 3¼	3¼- 3½
22-26 Fuel Oil (bbl.).	.85- .90	.85- .90	.95-1.00
ARKANSAS			
40-42 P. W. Dist.		3½- 3¾	
38-40 Distillate.	3¼- 3½	3¼- 3½	3½- 3¾
32-36 Gas Oil.	3 - 3¼	3 - 3¼	3¼- 3½
22-26 Refinery Fuel Oil.	.85- .90	.85- .95	.85- .90
Smackover Crude Fuel.	.85- .75	- .80	- .85
East Field Crude Fuel.	- .80	-.82½	-.87½

Many Small Orders For Gasoline Placed In Pennsylvania

CLEVELAND, July 28.—Uncertainty as to the future of gasoline markets in the Mid-Continent and other districts that depend mainly upon Mid-Continent crude oil, is resulting in greater demand on Pennsylvania refineries for motor fuel, Distributors within easy shipping district of the western Pennsylvania plants are placing a considerable volume of small orders for gasoline and demanding prompt delivery.

It is doubtful if there is one refinery in the western Pennsylvania field where gasoline stocks are burdensome. Most refiners have worked off all of their winter and spring accumulation and are filling orders from current output.

The aggregate volume of trade at some plants during July has been unprecedented but the value of the business has been less than numerous times before because of the prevailing low prices resulting from conditions in other fields.

Four of the leading refiners today said they were sold up or nearly sold up on their output of cylinder stocks. They admitted they went after the business and got it although they were quoting a cent or two more than refiners who have less aggressive selling organizations who are optimistic about the outlook. The higher fire test steam refined stocks are strong but considerable spottiness still exists as to 600. Larger refiners were quotng 17½ cents for this product (total immersion test) but by shopping around some 600 bulb immersion stocks could be picked up as low as 15½ cents and some was moved to a resale agent last week at 15¼ cents.

Some improvement in demand for viscous neutrals was reported again today. Prices have a little firmer tone.

Kerosene demand is good and stocks are light throughout the district. Fuel oil is scarce and firm. Paraffin wax is stronger. Naptha also is rather scarce.

Kentucky markets show little change over the week. Fractional reductions have been made in central Kentucky in prices of 60 and 68 gravity gasoline but 58 and 64 have been steady. Quotations, central Kentucky, today were: 58-60, 10¼ cents; 60-62, 11; 64-66, 12; 68-70, 12¾; 42-44 kerosene, 6¼; gas oil, 4⅜, and 24-26 fuel oil, 3⅜ cents.

Export Market Dull As Buyers Expect Still Lower Prices

By Special Correspondent

NEW YORK, July 28.

SOME of the leading refiners say that they might just as well have closed their offices for all the export business they did last week. Not a single cargo sale of any description was uncovered. British, French and German buyers manifested an academic interest throughout the week, but are apparently convinced that most of the major products will go lower. Foreign exchange was fairly firm at the beginning of the week but dropped towards the close, which was also held responsible for the slump in business.

Gasoline prices were easier at the Gulf. The majority of leading Independents were asking 9¾ cents for U. S. Motor and 11 cents for 64-66 gravity but one factor was offering at 9½ cents for U. S. Motor and 10½ cents for 64. Even these low prices failed to attract buyers. The reductions in tank wagon prices throughout the country have been attracting considerable attention abroad, and are not helping things any. Most of last week's activity was confined to the filling of standing contracts.

Locally U. S. Motor was freely offered around at 12 cents a gallon delivered to the trade, in single tank cars, but jobbers were content with covering immediate requirements. Some of the larger foreign buyers have been inquiring in a fairly active way, but when it comes right down to buying they are more or less disinterested. The trade in general looks for another slash in gasoline export prices shortly. Cased gasoline was also more or less neglected. Stocks are large and buyers show little disposition to purchase ahead. Japanese and Chinese buyers are fairly well covered on contract.

Kerosene Less Favorable

The kerosene situation was less favorable from the refiners' standpoint. Stocks are large and local export prices are more or less nominal in the absence of a normal foreign demand. At the Gulf leading refiners are quoting prime white from 5½ to 5¾ cents and 42.44 water white at 6¼ cents.

Water white in single tank cars delivered to the domestic trade can be had at 7½ cents a gallon although most refiners are quoting from 7⅞ to 8 cents a gallon.

Foreign inquiries for lubricants were more numerous than during the previous week with interest centered on the steam refined cylinder stocks. No sizable sales, however, were reported. Pennsylvania 600 steam refined in barrels New York was quoted at from 24 to 25 cents a gallon but in one direction business could have been done at as low as 23 cents on a firm bid for a good sized quantity. Spindle oils were virtually neglected. There was a better request for paraffin oils but actual business was confined to small parcels apparently for immediate consumption.

The gas oil situation showed little change. At the Gulf, leading refiners were asking 4⅛ cents for 26-28 and 4¼ cents for 32 plus, but the latter price could have been shaded ⅛ cent on a firm bid. No cargo sales or inquiries were heard of, and refiners were active chiefly against orders placed some time ago. Locally 36-40 was dull and easy at 5½ cents a gallon although some refiners were still demanding 6 cents a gallon at the refinery.

Bunker Oil Quiet

Bunker oil ruled very quiet and no price fluctuations developed. Leading refiners were asking $1.75 a barrel, f. o. b. New York harbor refinery, as the week closed. Stocks of bunker oil are fairly large and the movement continued largely against standing contracts. Diesel oil was in much the same position as bunker oil, with refiners asking $2.10 a barrel at the refinery.

Medicinal oils were dull. Petrolatums were in fair request on a basis of 13 cents a pound for snow white. Export inquiries were fairly numerous. The waxes were well maintained throughout the week. Foreign buyers were operating along fairly extensive lines. Match waxes were steady.

New York Market

The following prices are quoted by eastern seaboard independent refineries on products which are manufactured from Mexican crude transported from Tampico to the refinery by tanker and from California crude.

	July 28
*Gasoline (U. S. Motor) gal., Tank Cars	– .12
‡Bunker oil (F. O. B. New York) bbl...	–1.75
Diesel Oil F. O. B. Refinery bbl.....	–2.10
Gas Oil (36-40 refinery) gal.....	05½–.05⅝
†Kerosene, 45-150 W.W.Bulk Del.,N.Y..	07½ - 07⅞

*Delivered.
†Nominal.
‡Plus .06½ charge lighterage.

Export Markets

Furnished by big exporting oil companies. No actual sales. Record for statistical purposes only.

Illuminating Oils

	July 28	July 21
Bulk, gal., Bayonne.....	6.50	6.50
Barrels, gal., Bayonne, cargo.....	13.50	13.50
Cases, gal., Bayonne.....	16.90	16.90

Prices for water white oil (150 test) are 1 cent higher than those for standard white.

Gasoline-Naptha
(Cents per Gallon)

U. S. Motor, dead bulk.....	13.00
U. S. Motor, cases.....	27.15
Export Naptha bulk.....	14.25
63-66 deg. bulk.....	16.00
66-68 deg. bulk.....	17.50

Tide Water Oil Company
(f. o. b. Bayonne)

58-59 deg. bulk.....	13.50
58-59 deg. cases.....	27.15
Export grade, U. S. Motor Specifications bulk.....	13.00
63-65 deg. bulk.....	16.00
68-72 deg. bulk.....	18.50

	Bulk	Barrels	Cases
Standard white 110.....	6.50	13.50	16.90
Water white 150.....	7.50	14.50	17.90

The Texas Company

Gasoline, cases.....	27.15

Kerosene	Bulk	Barrels	Cases
Standard White.....	6.50	13.50	16.90
Prime White.....	7.00	14.00	16.40
Water White.....	7.50	14.50	17.90

Gulf Export Market

(Actual Sales Prices)

U. S. Motor gasoline	9½- 9¾
64 Gravity gasoline	10½-11
Water white kerosene	6¼
Prime white kerosene.....	5½
26-28 Gas oil.....	4⅛
32 plus Gas oil.....	4¼

British Importations

During the week ended July 7 there were imported into the United Kingdom 31,526,730 gallons of petroleum. Larger receipts included;

Consignee	Quantity	Description	Port of Origin
At London—			
Shell.....	1,235,860	Benzine	Abadan
Shell.....	1,761,937	Benzine	San Francisco
Shell.....	2,825,510	Benzine	S. Pedro
Arcos Ltd.....	1,914,513	Gasoline	Novorosik
Arcos Ltd.....	380,778	Kerosene	Batoum
British Pet....	632,539	Gasoline	Trinidad
British Pet....	1,210,636	Gasoline	Trinidad
British Pet....	1,335,717	Kerosene	Beaumont
Anglo Amer...	1,039,690	Fuel Oil	Tampico
Anglo Amer...	1,190,610	Naphtha	Philadelphia
Anglo Amer...	1,152,250	Gas oil	New York
Vacuum Oil...	854,933	Lubes	New York
At Hull—			
Anglo Amer...	1,831,540	Gasoline	New York
Anglo Amer...	870,020	Kerosene	New York
At Southampton—			
Shell.....	471,578	Fuel Oil	Tampico
Shell.....	2,012,999	Fuel Oil	Tampico
At Glasgow—			
British-Mex...	900,000	Gas Oil	Houston
At Swansea—			
National Ref..	2,188,427	Crude	Abadan
National Ref..	2,438,000	Crude	Abadan
National Ref..	2,491,000	Crude	Abadan
National Ref..	2,464,500	Crude	Abadan

Inquire for Light Pale Oils

HOUSTON, July 26.—Inquiries are appearing in the Gulf Coastal lubricant market for 200 and 300 viscosity zero cold test pale oils for contracts over the winter months. The present movement of these oils is low as the principal spot sales are of 500 and 700 viscosity grades. Considerable quantities of lubricants are now moving in compartment cars, 300 viscosity oil being included with the heavier grades. Reds are slower in a seasonal sense but movement is better than in recent weeks.

RENO, NEV., July 28.—Union Oil Co. of California has entered southern Nevada by opening a new distributing station at Las Vegas in June. D. F. Colgin is manager of the station, according to D. E. Ericson, special agent for the company at Reno.

Crude Oil Prices All Fields

EASTERN FIELDS

	1924 July 28	1923 High		1923 Low		1922 High		1922 Low	
Bradford-Allegany	$3 25	Feb.15	$4.25	Nov.13	$2.60	Jan.1	$4.00	July 19	$3.00
Other Pennsylvania	3.00	Feb.15	4.00	Nov.13	2.35	Jan.1	4.00	July 19	3.00
Cabell	1.60	Feb.15	2.76	Nov.13	1.20	Jan.1	2.61	July 19	1.86
Corning	1.90	Feb.15	2.30	Nov.14	1.25	Jan.1	2.40	July 20	1.75
Somerset	1 70	Feb.15	2.55	Nov.13	1.15	Jan.1	2.40	July 19	1.65
Somerset Light	1 85	Feb.15	2.80	Nov.13	1.30	Jan.1	2.65	July 19	1.90
Ragland	1.00	Feb.15	1.10	July 10	.75	Jan.1	1.25	July 19	1.00

Somerset oil run prior to Oct. 1, 1923, takes price of 6 cents lower than above quotations.

CENTRAL STATES FIELDS

Wooster	$1.90	Feb.19	$2.50	Nov.9	$1.25	Jan.1	$2.70	Sept.21	$1.90
Lima	2.08	Feb.19	2.58	Nov.9	1.43	Jan.1	2.48	July 20	1.98
Indiana	1 88	Feb.19	2.38	Nov.9	1.23	Jan.1	2.28	July 20	1.78
Princeton	1 87	Feb.19	2.37	Nov.8	1.22	Jan.1	2.27	July 20	1.77
Lodi	1.90	Feb.19	2.50	Nov.9	1.25	Jan.1	2.70	July 20	1.90
Illinois	1 87	Feb.19	2.37	Nov.8	1.22	Jan.1	2.27	July 20	1.77
Waterloo, Ill.	1 35	Feb.19	1.85	Nov.9	.70	Jan.1	1.75	July 20	1.25
Plymouth	1 25	Feb.19	1.75	Nov.9	.60	Jan.1	1.65	July20	1.15
Canadian Petrolia	2.48	Feb.19	2.98	Nov.9	1.83	Jan.1	2.88	July 20	2.88

MID-CONTINENT AND NORTH TEXAS FIELDS

Below 30	$1.10	Currie	1.50
30-32.9	1.25	Mexia	1.50
33 and above	1.50	Powell	1 50

Humble's Ranger Prices

Below 30	$1.00	33-35.9	1.40
30-32.9	1.20	36 and above	1.60

Magnolia's Price Schedule
North and North-Central Texas, Okla., and Kan.

Below 28	$ .90	Corsicana, light*	1.25
28-30.9	1.00	Corsicana, heavy	.90
31-32.9	1.10	Thrall	1.00
33 and above	1 25	*Including Powell and Mexia	

NORTH LOUISIANA-ARKANSAS FIELDS

Caddo, 38 degrees and above	$1.35	do 35 to 37.9	$1 15
do 35 to 37.9	1.25	do 32 to 34.9	1.00
do 32 to 34.9	1.15	De Soto	1.35
do below 32	1.00	Crichton	1.15
Homer, 35 and above	1.35	Bellevue	1.25
do 33 to 34.9	1.25	Smackover, 26 and above	.95
do 31 to 32.9	1.15	25 to 25.9	.80
do below 31	1.00	24 to 24.9	.70
Haynesville, 33 and above	1.25	Below 24 Be	.60
do below 33	1.15	Stephens 28 and above	1.00
El Dorado, 33 and above	1.35	do 26-27.9	.95
do below 33	1 25	do 23-25.9	.80
Bull Bayou, 38 and above	1 30	do Below 23	.60
		Cotton Valley	.80

GULF COASTAL FIELDS

	1924 July 28	1923 High		1923 Low		1922 High		1922 Low	
Spindletop	$1.50	Mar.15	$1.75	Aug.18	$1.00	Jan.1	$1.25	Dec.30	$1.25
Goose Creek "A"	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Goose Creek "B"	1.30	Mar.15	1.50	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Sour Lake	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Humble	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Batson	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1 25
Hull "A"	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Hull "B"	1.30	Mar.15	1.50	Jan.1	.80	Jan.1	1.25	Dec.30	1.25
West Columbia	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Edgerly	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Vinton	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Jennings	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Dayton	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Saratoga	1.50	Mar.15	1.75	Aug.18	1.00	Jan.1	1.25	Dec.30	1.25
Orange "A"	1.50								
Orange "B"	1.30								
Pierce Junction "A"	1.50								
Pierce Junction "B"	1.30								

WYOMING FIELDS

Elk Basin	$1.70	Feb.17	$2.10	Nov.9	$ .95	Jan.1	$1.90	Aug.4	$1.20
Grass Creek	1.70	Feb.17	2.10	Nov.9	.95	Jan.1	1.90	Aug.4	1.20
Big Muddy	1.25	Feb.17	1.65	Nov.9	.45	Jan.1	1.40	Aug.4	.70
Salt Creek	1.35	Feb.17	1.65	Nov.9	.60	Jan.1	1.40	Aug.4	.70
Lance Creek	1.65	Feb.17	2.10	Nov.9	.80	Jan.1	1.90	Aug.4	.20
Rock Creek	1.45	Feb.17	1.75	Nov.9	.60	Jan.1	1.50	Aug.4	.80
Osage	1.65	Feb.17	2.10	Nov.9	.80	Jan.1	1.90	Aug.4	1.20
Cat Creek, Mont.	1.70	Feb.17	2.10	Nov.9	.95	Jan.1	1.90	Aug.4	1.20
Sunburst, Mont.	.98	Feb 17	1.50	June 6	.70				

CALIFORNIA

14-19.9	$1.00	25-25.9	$1.10	30-30.9	$1.25
20-20.9	1.01	26-26.9	1.15	31-31.9	1.28
21-21.9	1.02	27-27.9	1.16	32-32.9	1.31
22-22.9	1.03	28-28.9	1.19	33-33.9	1.34
23-23.9	1.05	29-29.9	1.22	34-34.9	1.37
24-24.9	1.07			35 and above	1.40

North Texas Markets Quiet; Prices Firm

Staff Special

WICHITA FALLS, July 26.—North Texas refinery markets have been quiet during the past week. Movement of gasoline has been fair and prices have been firmly held in all quarters. No effect was felt in the market up to closing time today of the crude cut posted this morning by the Magnolia Petroleum Co.

Throughout the district U. S. Motor (Navy) gasoline is selling at 8 to 8¼ cents per gallon. In one or two instances refiners have conceded ⅛ cent per gallon to equalize the freight rate with Group 3 on shipments moving north but generally speaking this has not been done. Reports of sales at 7⅞ cents were more frequent earlier in the week than they have been during the past few days.

A little 56-58, 450 end point gasoline has sold at 7⅝ cents per gallon but the bulk of this commodity is still moving at ⅛ to ¼ cent more. High gravity gasolines have been relatively weak with 64-66 selling at 1½ to 1¾ cents over U. S. Motor.

Many of the refiners in this district have been seeking to sell gasoline at current prices for delivery over August. Thus far they have not met with much success in this line.

Kerosene movement is very light and 41-43 is very freely offered at 4 cents per gallon. There has not been much shading of that figure, however. Distillates are not sought but prices are unchanged at 3 to 3¼ cents per gallon.

Exporters have been in the field for gas oil again this week and have bought some at around 2½ cents per gallon. For domestic movement most of the refiners are not willing to accept much less than 2⅝ cents per gallon.

A majority of the plants in north Texas are now asking 80 cents per barrel for fuel oil. Scattered sales have been made during the week, however, at 75 cents and buyers are not finding great difficulty in buying at 77½ cents.

Prior to the Magnolia crude cut today spot crude in Archer and Young counties was active and selling at $1.40 per barrel, a gain of 10 cents per barrel over last week's low. With the Magnolia paying only $1.25 for 33 gravity and over it is expected that the spot market will seek that level in a short time.

WARRENSBURG, MO., July 28.—The opening at Boonville, Mo., on July 4 of the new filling station of the Land Petroleum Co., with headquarters here, was advertised by airplane exhibition flights. The new station is of red brick and black and white stucco, with tile roof. An office and rest room is included. The station is equipped with two pumps, and air and water stations. J. H. Morley and Tom Gibson are in charge. Land's Best Gasoline and La-Pe-Co oil and greases will be sold.

Benzol Demand Active; Chemicals Spotty

By Special Correspondent

NEW YORK, July 28.—Following is a review of the markets for oils and supplies used in refining and compounding:

Benzol

Demand continued spirited. Prices were well maintained. Stocks of moderate proportions.

Linseed Oil

Reflected strength in flaxseed and crushers were firm in their ideas. Stocks on hand small. Movement chiefly against standing contracts. More interest in forward deliveries. Paint manufacturers and linoleum makers buying more actively.

Animal Oils

Demand more active but price fluctuations narrow. Stearine in better demand. Oleic acid moving more freely. Neatsfoot oil quiet but well maintained. More interest in oleo oil and degras. Tallow oil moving in routine way.

Fish Oils

Tone is easier. Few larger buyers inclined to purchase ahead and slightly lower prices for pressed and bleached menhaden oils announced. Consumption of sperm oil small. Buyers operating cautiously. More inquiries for whale oil but demand lags.

Caustic Soda

Inquiry more active but business slow. Market is marking time. Movement is light and mainly on old contracts. Prices softer than at start of week.

Soda Ash

Demands spasmodic and not much new business developed as the week closed. Stocks ample.

Sulfuric Acid

Little animation noted. Prices unchanged.

Bleaching Powder

Dull. Not much interest in spot. Inquiry for forward deliveries slightly better.

Naval Stores

Rosins up a trifle. Demand more active. Turpentine shade lower. Buyers holding off. Southern markets flat and no stimulating advices received.

Revised Auto Output Figures Lower

CLEVELAND, July 26.—Reports of 99 passenger car and 137 truck manufacturers to the Department of Commerce on their June production place the total output for the month at 245,890. An early estimate based by the National Automobile Chamber of Commerce on the volume of shipments of automobiles in June, placed production for the month at 249,868 cars and trucks. Revised production figures for this year follow:

	Passenger Cars	Trucks
January	287,353	28,925
February	336,374	31,153
March	348,356	34,118
April	337,045	36,156
May	279,447	33,411
June	217,927	27,863

Refiners', Compounders' Supplies

Following are the average market prices for the week on materials used by refiners and Compounders f. o. b. shipping point as effective this date.

Benzol

	July 28	July 21
Pure Water White, Tanks.....gal.	.24-25	24-25
90%.....Tanks.....gal.	-23	-23

Above are industrial grades of benzol; motor grades run 2c under to 2c over gasoline tank wagon prices at point of delivery.

Refiners' Supplies

Soda Ash light 58% bags cwt.	-$1.38	-$1.38
Silicate of Soda 60 deg.....Drums.....cwt.	-1.70	-1.70
Sal Soda wks.....cwt.	1.10-1.25	1.10-1.25
Caustic Soda 76% solid.cwt.	-3.10	-3.10
Chloride of Lime.....cwt.	.....	.....
Works.....	1.90-2.10	1.90-2.10
Sulphuric Acid 60 deg. tank cars f. o. b. shipping point.....per ton	9.00-10.00	9.00-10.00

Compounders' Supplies (Open Market)

Vegetable Oils—		
Linseed carloads Spot...gal.	-1.00	-1 01
July-September.....	-1.00	-1.01
October.....	- .94	- .94
October-Dec.....	- .92	.....
Tanks, spot.....	- .94	- 95
Less carload Spot.....gal.	-1.02	-1.03
Less than 5 Bbls. Spot.....	-1.04	-1 05
Boiled, tank Spot.....gal.	- .95	- 96
Boiled, carloads Spot....gal.	-1.03	-1 04
*Soya Bean Spot, Tanks..lb.	- .10¾	- .10¾
Animal Oils—		
English Degras.....lb.	.04½-.05¼	.04½-.05¼
Domestic Degras, bbls. carloads....lb.	.04 -.05	.04 -.05
*Horse.....lb.	-.08	-.08
Oleic Acid—		
Dist.....lb.	-.08¾	-.08¾
Saponified.....lb.	-.08¾	-.08¾
Lard Oils—		
Prime Winter Strained.. 1 to 1½ffa.40/45c.t.lb.	.14	0.14
Extra Winter Strained.. 2 to 4½ffa.40/45c.t.lb.	.12¼	.12¼
Extra..... 4 to 5 ffa.40/45c.t.lb.	.11¾	.11¾
Extra No. 1..... 7 to 10 ffa.40/50c.t.lb.	.11¼	.11¼
No. 1.....15 to 18 ffa.40/45c.t.lb.	.10¾	.10¾
No. 2.....22 to 23 ffa.40/45c.t.lb.	.10¼	.10¼
Prime Edible Tallow under 1¾ ffa. 40/45c.t.N.Y.....lb.	-.09	-.09
Tallow acidless.....lb.	-.11½	-.11½
Lard Stearine.....lb.	-.14¾	-.14½
Oleo Stearine.....lb.	-.12½	-.13
Neatsfoot Oil—		
Pure.....bbls.-lb.	.15	.15
Extra.....do lb.	.11¼	.11¼
No. 1.....do lb.	.10¾	.10¾
Cold pressed.....lb.	.19½	.19½
Fish Oils—		
Menhaden Oil		
Light pressed.....gal.	-.53	.54-.55
White.....gal.	-.58	.59-.61
Yellow bleached.....gal.	-.56	.57-.60
*Herring tank cars coast.....gal.	-.40	-.50
Whale, extra winter bleached.....gal.	-.81	-.81
Seal.....gal.	Nominal	
Naval Stores—		
Turpentine, N.Y.....gal.	.83	.84
Turpentine†.....gal.	.77	.77
Rosin B. N. Y.....Bbl.	5.65	5.55
Rosin F. N. Y.....Bbl.	5.90	5.80
Rosin B†.....Bbl.	4.40	4.30
Rosin F†.....Bbl.	4.62½	4.62½
Rosin Oil 1st run.....gal.	.40	.40
Rosin Oil 2nd run.....gal.	.45	.45
Pine Tar—		
Kiln Burnt.....Bbl.	10.50	10.50
Retort.....Bbl.	10.50	10.50

†Savannah, Ga. market.
*Nominal

Weather Outlook Good Again This Week

CHICAGO, July 28.—Another good week for the jobber is in prospect, as far as the weather man is able to provide. There will be some rain but no oil man wants to see his farmer friends try to get along without it entirely at this season. The rains will not be hard nor of long duration, nor are they expected to cover much territory. Temperatures will be mild.

The upper Mississippi and lower Missouri river valleys will get the rain early in the week. The south, including the Ohio river valley will get it about the middle of the week. By the latter part of the week the showers will have shifted to the Great Lakes country. The whole region will be 75 per cent fair, it is predicted, and cool pleasant weather will prevail in all sections during the middle and latter portions of the week. The first few days will be warm.

Most all the rain that fell last week came to the region of the Great Lakes. A big share of that was around Lake Michigan and west thereof. Even there the oil men enjoyed a fair gallonage, so it is safe to assume the weather was not much of a handicap to the marketing branch of the industry last week.

Temperatures have been conductive of motoring since the first cool wave of July faded out about July 4.

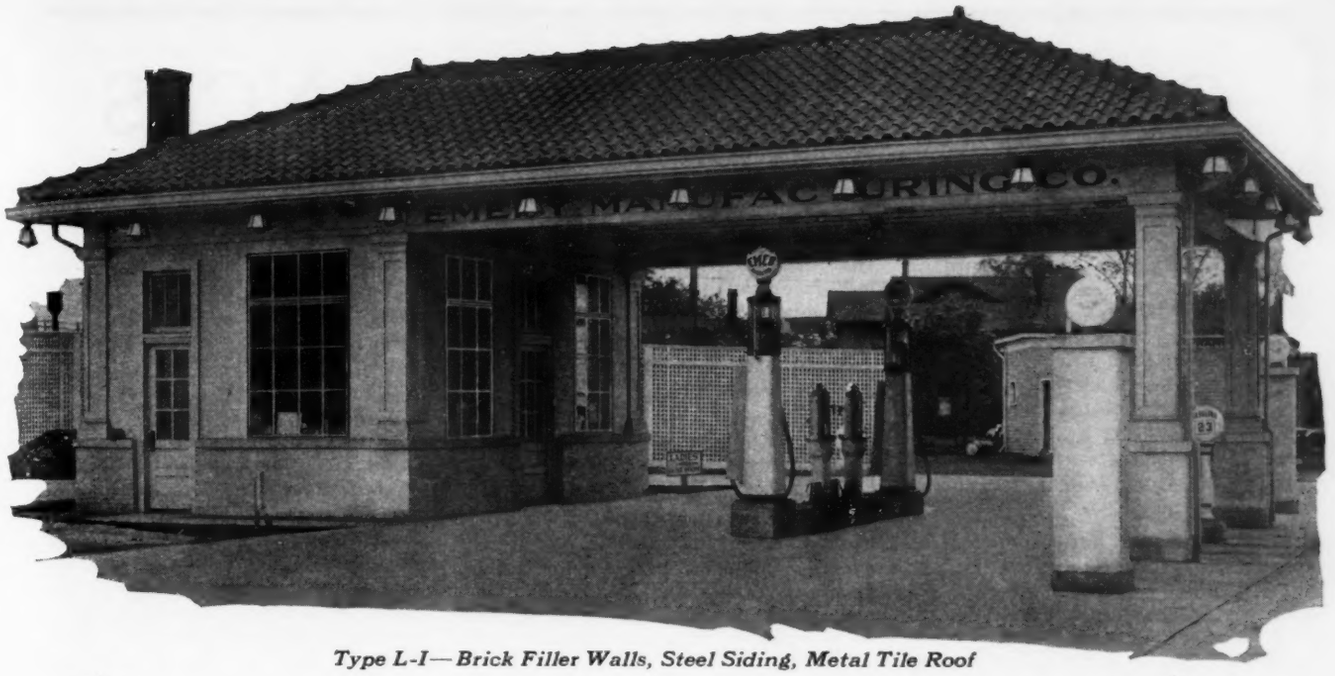
Middle States Must Report On Reforms

NEW YORK, July 26.—Judge John C. Knox of the United States district court has ordered the Middle States Oil Corp. officials that were defendants in the application of William Shivers for a receiver for Middle States, to file by Aug. 8 a report on the progress being made toward reform in the corporation as ordered by the court July 9 when the application was refused for the present.

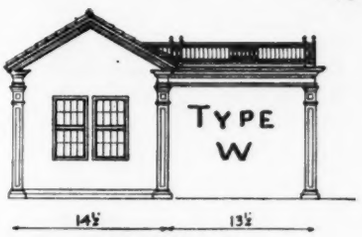
The court also ordered the defendants to appear in court Aug. 15 for further consideration of the application for a receiver. The defendants also were ordered on July 23 to file in five days a list of the holders of the corporation's 7 per cent secured gold notes with the amount of their holdings. The defendants also are enjoined from disposing of any of the corporation's property but permitted them to continue the regular oil business.

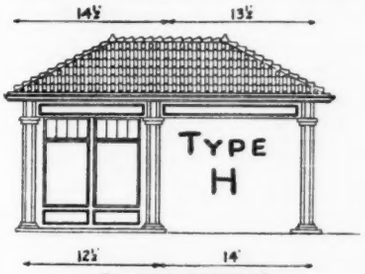
Charles Greenhaus, a New York broker, has been enjoined by the supreme court of New York from trading in the stock of Middle States. It was charged by the state legal department that Greenhaus obtained stock from holders through misrepresentation.

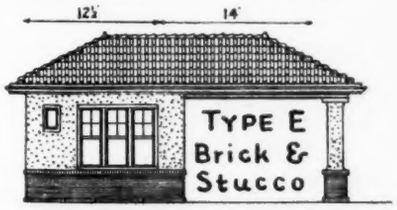
ALGONA, IA., July 28.—On the opening day of its new filling station here, the Skelly Oil Co. gave away 500 cigars and 300 caps and balloons to its patrons. P. G. Davis is manager of the station.

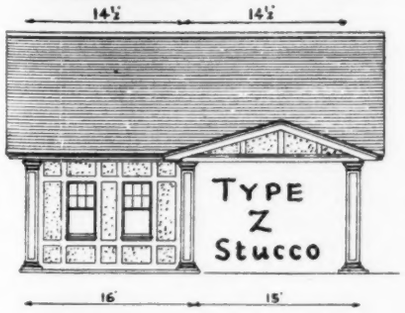


Type L-I—Brick Filler Walls, Steel Siding, Metal Tile Roof









To Serve You Better

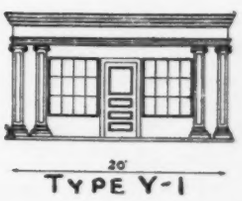
OUR new shops are now being completed at Newark, N. J., where we have three times our former capacity for designing and manufacturing filling station buildings of every size and style,—of brick, stucco or all steel.

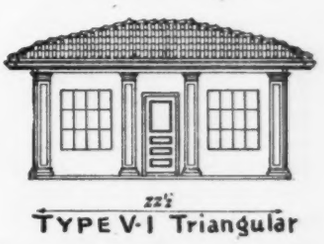
In addition to being able to serve oil companies in the eastern and central states more promptly than from our former shops at Cleveland, we can now ship by water direct from our shops to southern, Gulf coastal and Pacific states at a material saving in freight costs.

There are over fifty types of Shepard stations for you to select from, ranging in price from $3,500 to as low as $500. It will pay you to get our complete catalogue or have us quote on duplicating your present style stations.

Our new address is

THE ARTHUR B. SHEPARD CO., Inc.
NEWARK, NEW JERSEY
(Formerly of Cleveland, Ohio)





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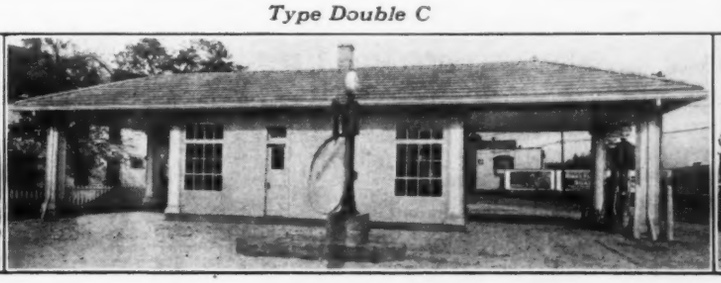

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OIL STOCKS AND FINANCES

Block Of Union Stock Offered At $132

NEW YORK, July 26.—Dillon, Read & Co. this week offered 233,064 shares of Union Oil Co. of California capital stock at $132 a share. This is the stock the bankers recently bought of the Shell Union Oil Corp. and is not a new issue.

The directorate of the Union will be expanded to make room for Clarence Dillon, member of the banking firm offering the stock; James C. Brady, director of the Central Union Trust Co. George W. Davison, president of the Central Union Trust Co. and 20 other important corporations.

As the Union pays $7.20 a share a year, the offering is at a price to yield approximately 5½ per cent. It was announced the company soon would reduce the par value of the stock from $100 to $25 a share and issue four shares of the new for one of the old. Application also is to be made to list the stock on the New York Stock Exchange.

Concerning the company's operations, President W. L. Stewart said in part in a letter to the bankers:

"The company owns in fee, or mineral rights in fee, 188,888 acres and holds under lease 193,706 acres—all in the United States. It also owns in fee approximately 425,700 acres in Colombia, South America. In a recent report made for the bankers, E. DeGolyer, independent oil engineer, estimates the company's proven oil reserves in California alone at 200,000,000 barrels. These reserves embracing every important field are generally recognized as being among the most valuable in California. In addition, the company's Colorado, Wyoming and New Mexico properties are believed to have great potential value. Production during 1923 amounted to 18,741,633 barrels, and total receipts (including oil purchased) to approximately 48,600,000 barrels. Present production from 465 wells in California is at the daily rate of approximately 42,000 barrels, and in addition the company is purchasing an average of 52,000 barrels per day. It also has 157 wells shut in capable of an initial daily production of about 12,000 barrels.

"The percentage of earnings on stock outstanding in each year as shown above averages more than 19 per cent for the period of 8½ years. For the first six months of the current year net earnings were at the annual rate of approximately $12,400,000, or over $13 per share on the 945,000 shares outstanding, including 45,000 shares subscribed in February, 1924.

"The company has paid cash dividends in each year since 1896, excepting only 1914 and 1915.

"Total net earnings available for dividends during the 24½ years ended June 30, 1924, have amounted to over $100,000,000. Of this amount $53,621,481 has been paid in cash dividends. Cash dividends during this period have averaged almost 7 per cent per annum. In addition, stock dividends have been paid as follows: 200 per cent in 1908, 10 per cent in 1918 and 80 per cent in 1922.

"The policy of the company has been to pay regular quarterly dividends, the present rate being 7.2 per cent per annum. Change to this dividend rate was made subsequent to declaration of 80 per cent stock dividend in 1922, the rate for the two years previous having been 12 per cent per annum and for the three years theretofore 10 per cent or more.

"The consolidated balance sheet of the company as of December 31, 1923, adjusted to give effect to the issuance of $4,500,000 par value of capital stock offered to stockholders and subscribed in February, shows a net worth of more than $124,000,000. In his report, Mr. De Golyer, basing his estimate on the company's consolidated balance sheet of that date, appraised the actual net worth at more than $172,000,000, or $182 per share of capital stock of $100 par value.

"Current assets at June 30, 1924 amounted to approximately $46,000,000 and were approximately 6 times current liabilities."

Simms Nets $2.47 On $10 Stock In Half Year

NEW YORK, July 26.—Simms Petroleum Co. reports net profits of $862,681 for the second quarter and $1,654,866 for the first half of 1924 both before federal taxes. Net for the half year was 169 per cent greater than net for the first half of 1923 and equivalent before federal taxes to $2.47 a share on the 669,065 shares of $10 stock.

Simms' production of crude in the second quarter totaled 1,010,212 barrels as against 1,099,577 in the second quarter of 1923. Production in the six months ended June 30 amounted to 2,109,789 barrels as against 2,034,181 barrels in first half of 1923.

The balance sheet as of June 30 shows current assets of $4,573,123 and current liabilities of $372,827. The crude oil in storage was carried at less than the market value on June 30, the company says.

The consolidated income accounts for the second quarters of 1924 and 1923 follow:

	1924	1923
Production income	$1,866,691	$1,100,913
Miscel. income	66,624	67,420
Gross income	$1,933,315	$1,168,333
Miscel. expenses	531,564	480,756
Develop. expense	137,456	156,795
Deprec., deplet.	401,614	313,073
Net income	$ 862,681	$ 217,709

Income accounts for the first halves of 1924 and 1923 follow:

	1924	1923
Production income	$3,746,061	$2,468,466
Miscel. income	141,750	163,246
Gross income	$3,887,811	$2,631,712
Miscel. expenses	1,085,170	959,882
Develop. expenses	323,457	412,419
Deprec., deplet.	824,318	$ 645,624
Net income	$1,654,866	$ 613,786

Consolidated balance sheets as of June 30, 1924 and 1923, compare:

ASSETS

	1924	1923
*Active leaseholds	$2,161,700	$2,355,747
Inactive leaseholds	1,500,558	2,270,082
Appreciation of leaseholds	3,696,323	2,822,597
Wells, improvements	3,074,779	2,743,203
Tank cars	1,674,049	1,676,844
Pipe lines, storage tanks	1,653,163	1,488,437
Other equipment	461,445	453,966
Invest other co.	608,518	424,279
Cash, U. S. Treas. notes	2,053,258	645,830
Accts, notes, accruals rec	502,036	281,112
Crude oil	1,716,440	1,757,093
Materials, supplies	301,389	362,057
Deferred items	109,480	86,642
Total	$19,513,138	$17,367,889

LIABILITIES

	1924	1923
†Capital stock	$6,690,650	$6,732,800
Trust certificates	564,000	.....
Accounts, vouchers payable	262,111	459,962
Notes payable	.....	150,000
Accrued interest, taxes, etc.	110,716	80,497
Reserves	3,430,424	3,762,184
Deferred credits	.....	27,678
Surplus	8,455,237	6,154,768
Total	$19,513,138	$17,367,889

*After depletion. †Represented by 669,065 shares of $10 par value stock.

Cleveland Stock Market

	Par	July 25 Bid	Asked	High	Low
Canfield Oil Co.	$100	135	..	.....	.....
do pfd	100	92	95	95¼	95
National Refining	25	86¼	89	88	88¼
do pfd	100	124	130	126	116
Paragon Refining	25	7½	7¾	12¾	5¼
do pfd	100	48	60	75	40
Fred G. Clark Co.	10	3¾	4	6	2

x Ex. Dividend

Transactions In Oil Shares on New York Stock Exchange

1923 High	1923 Low	1924 High	1924 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions week ended July 26 Sales	First	High	Low	Last	Ch'ge
.....	.....	43	25	(sh) 200,000	N.P.	American Republics	.....	.....	100	37	37	37	37	+1
29½	24⅞	34⅝	27½	$40,060,500	$25	Associated Oil	37½cQ	July 25, 24	2,600	28¾	29¼	28½	28¾	
160	98¾	140½	78½	50,000,000	100	Atlantic Refining	$1Q	June 16, 24	22,300	83½	88	82½	84¾	+ ¼
120	115	118	109¼	20,000,000	100	do pfd	$1¾Q	May 1, 24	700	111	111	111	111	—1
35	9⅞	21⅝	14	14,000,000	25	Barnsdall Corp. A	.....	Apr. 30, 21	12,300	20	20⅞	19½	19½	— ½
22	6	16¼	10	3,713,275	25	do B	.....	Apr. 30, 21	1,000	13½	14⅞	13½	14⅜	— ⅛
9⅛	1¾	5	1½	(sh) 150,000	N.P.	Caddo Central O. & R	.....	.....	1,800	2	2¼	2	2	
29⅜	17⅛	29¼	19½	$ 17,377,000	$25	California Petroleum	43¾cQ	June 2, 24	20,400	21¾	23	21¾	22½	+1
110½	90½	107	92½	11,955,100	100	do pfd	$1¾Q	July 1, 24	300	94½	95	94½	95	+1⅝
62¼	22¾	40¼	23⅛	(sh) 1,217,427	N.P.	Cosden & Co	.....	Aug. 1, 23	21,600	26¾	29¼	26½	28¾	—1⅝
90⅜	83¼	95	86¾	$ 6,998,000	$100	do pfd	$1¾Q	June 1, 24	.....	.....	.....	.....	.....	.....
54	23	46¾	31⅜	19,830,000	100	General Asphalt Co	.....	.....	16,100	43¼	44⅜	43	43½	+ ⅜
83	60	81	71½	7,416,000	100	do pfd	$1½Q	June 2, 24	500	.....	78⅜	77	78⅜	+1⅜
.....	.....	44½	38⅜	38,015,100	25	General Petroleum	50cQ	June 15, 24	53,700	43⅜	44¼	42⅞	43⅜	.....
78	40¾	82¼	61	25,000,000	100	Houston Oil Co	.....	.....	7,600	69¾	72⅜	69¾	71⅜	+1⅜
11¼	3⅜	9¼	6⅜	(sh) 450,000	N.P.	Independent Oil & Gas	25cQ	June 30, 24	3,000	7	7½	7	7¼	+ ¾
19	1	2⅞	½	$ 5,000,000	$25	Indiahoma Refining Co	.....	July 1, 21	1,300	½	⅝	½	⅝	+ ⅛
8½	3½	7½	3¾	7,830,450	10	Indian Refining Co	.....	Dec. 15, 20	300	6⅛	6¼	6⅛	6¼	+ ¼
49½	49½	74	60	2,296,400	100	do pfd	.....	Dec. 15, 21	100	.....	66	66	66	—7¾
19¼	7⅛	16⅞	10½	1,094,744	N.P.	Invincible Oil Corp	.....	.....	10,500	11	13⅝	11	12⅝	+1⅜
3½	¼	1	¼	$ 1,784,620	$10	Kansas & Gulf Corp	.....	.....	.....	.....	.....	.....	.....	.....
28⅜	16	37½	25⅜	(sh) 261,950	N.P.	Maracaibo Oil	.....	.....	300	28⅜	31	27¾	30½	+2½
59⅝	17½	42	29	(sh) 1,549,190	N.P.	Marland Oil Co	.....	July 1, 23	53,500	30½	32⅞	30⅜	32⅛	+1¾
293	182	.....	.....	$ 45,942,800	$100	Mexican Petroleum Co	$3Q	July 21, 24	.....	.....	.....	.....	.....	.....
105¼	100¼	.....	.....	12,000,000	100	do pfd	$2Q	July 21, 24	.....	.....	.....	.....	.....	.....
23¾	5¾	24⅛	14⅛	(sh) 357,900	N.P.	Mexican Seaboard Oil	50cQ	May 15, 24	10,700	20⅜	21⅜	20⅜	21	+ ¾
23¼	6	22¾	12⅞	(sh) 270,000	N.P.	do V. T. C	50cQ	May 15, 24	4,100	20	21½	20	20¾	+ ⅜
12¼	3¼	6⅞	1⅝	$ 29,798,450	$10	Middle States Oil Corp	.....	July 1, 23	18,900	1¾	2	1¾	2	+ ⅛
67	31	34¾	31⅛	$ 39,626,000	$25	Ohio Fuel Supply Co	62½cQ	July 15, 24	600	32½	34¾	32½	34¾	+2¼
3⅜	⅞	2⅜	1½	5,359,425	5	Oklahoma P. & R. Co	.....	Apr. 1, 21	6,300	2	2⅜	2	2⅜	+ ⅛
52⅜	31¼	58¼	45	(sh) 3,500,000	N.P.	Pacific Oil Co	$1S.A.	July 21, 24	27,900	47½	49	47⅛	48½	+1¼
93½	53	61¼	42⅛	$ 48,292,450	$50	Pan American P. & T	$1Q	July 21, 24	72,300	52½	58¾	52¼	56½	+4⅛
86	50½	59½	41¼	81,280,000	50	do Class B	$1Q	July 21, 24	151,100	51	57⅜	50⅜	55½	+4⅝
6¼	1¼	3½	1⅞	(sh) 198,770	N.P.	Panhandle P. & R	.....	.....	800	2⅜	2⅞	2⅜	2½	+ ¼
68	27½	40¼	35	$ 3,855,500	$100	do pfd	.....	July 2, 23	.....	.....	.....	.....	.....	.....
69⅝	19¾	42¾	31⅜	(sh) 1,479,702	N.P.	Phillips Petroleum	50cQ	June 30, 24	44,600	33	36	33	34⅞	+1¼
6	1⅜	4½	1½	$ 29,622,925	$25	Pierce Oil Corp	.....	.....	26	1¾	1⅞	1⅝	1⅞	+ ¼
44½	16	39¾	20	15,000,000	100	do pfd	.....	Feb. 1, 22	33	28⅛	29	27	27¼	—1
58⅜	17	43½	22¾	11,467,850	50	Producers & Refiners	.....	Sept. 15, 23	6,700	26	27½	25½	27	+1½
49¼	36	47½	22	2,845,350	50	do pfd	87½cQ	May 5, 24	200	45	45⅜	45	45⅛	+ ⅜
32	16¼	26⅜	20	70,091,425	25	Pure Oil Co	37½cQ	June 1, 24	52,500	20¾	25	20¾	24¾	+4
100	82½	98½	92	13,000,000	100	do 8% pfd	$2Q	July 1, 24	400	94	98	94	98	+5
55⅜	40½	59¼	46⅛	(sh) 611,579	13.40	Royal Dutch, N. Y. shares	$1.24	Feb. 11, 24	8,400	49	†52⅝	†44¼	†47⅞	+4½
41¼	29⅛	41½	33	(sh) 152,063	£2	Shell Transport & T	$1.07½	July 23, 24	400	34⅞	35	34⅞	35	— ¾
19¼	12⅜	20⅛	15¾	(sh)10,000,000	N.P.	Shell Union Oil Corp	25cQ	June 30, 24	18,600	16¼	17⅜	16¼	17⅜	+ ⅜
95	89½	96⅜	91½	$ 20,000,000	$100	do pfd	$1½Q	May 15, 24	100	95⅛	95⅛	x95⅛	95⅛	+ ⅜
16	6½	14⅞	10⅜	7,204,030	10	Simms Petroleum Co	.....	.....	22,300	12¾	14⅜	12¾	13⅞	+1⅜
39⅜	16	27⅜	15	(sh) 4,480,782	N.P.	Sinclair Consolidated	.....	May 31, 24	45,900	16¾	17⅞	16¾	17⅜	+ ¾
99⅛	80¼	88½	77	$ 18,914,900	$100	do pfd	$2Q	May 15, 24	700	85	88⅛	85	88⅛	+3⅛
35	12⅛	29	17⅛	20,579,090	25	Skelly Oil Co	.....	.....	9,000	18½	20⅝	18½	19	+1⅛
64½	47⅛	68½	55½	233,630,950	25	S. O. California	50cQ	June 16, 24	15,200	57⅜	59	57¾	58⅛	+1⅜
44⅛	30⅞	42¼	33	504,251,775	25	S. O. New Jersey	25cQ	June 16, 24	36,500	33⅞	36⅜	33¾	36	+2
118¼	114¾	119	115⅜	199,972,900	100	do pfd	$1¾Q	June 16, 24	1,000	118	118⅜	117¾	118⅜	+ ⅜
6¾	2	7¾	2⅜	(sh) 998,828	N.P.	Superior Oil Corp	.....	Dec. 20, 20	29,400	7⅜	7⅝	6¾	7	— ⅛
52⅞	34⅝	45⅜	37¾	$164,450,000	$25	The Texas Co	75cQ	June 30, 24	21,600	39⅜	40¾	39	40⅛	+ ⅜
24¾	5½	15¼	8¼	8,380,340	10	Texas Pacific Coal & Oil	.....	June 30, 23	9,300	9	10⅜	9	10⅝	+1⅜
144	94	151	118¼	50,003,700	100	Tide Water Oil Co	$1Q	June 30, 24	.....	.....	.....	.....	.....	.....
14½	1¼	6¼	3¾	(sh)2,957,529	N.P.	Transcontinental Oil Co	.....	.....	204,700	4⅜	6	4¼	6	+1¼
99¾	81	119½	94	$ 18,000,000	$100	Union Tank Car Co	$1½Q	June 2, 24	2,700	106½	119½	106½	112	+6
114	100	116¾	106¼	12,000,000	100	do pfd	$1¾Q	June 2, 24	300	114⅞	116¾	114⅞	116¾	+3⅝
30⅜	20	29⅜	23⅛	(sh) 460,000	N.P.	White Eagle Oil & Ref	50cQ	July 20, 24	1,800	24	24⅜	24	24	— ¼

*New High †New Low xEx-Dividend Total Sales 1,047,049

Standard Oil Stock Traded In New York Curb Market

1923 High	1923 Low	1924 High	1924 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions week ended July 25 Sales	First	High	Low	Last	Ch'ge
19¾	13½	18	14⅜	£3,000,000	£1	Anglo American	55cS.A.	May 15, 24	1,300	15⅛	15¾	15⅛	15¼	+ ⅛
7⅞	2½	4⅞	3	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	100	3⅛	3⅛	3⅛	3⅛	+ ⅛
150	108	265	155	$ 1,000,000	$100	Borne-Scrymser	$4S.A.	Apr. 15, 24	50	217	220	217	217	—1
94½	69	85½	60	10,000,000	50	Buckeye Pipe Line	$1Q	June 14, 24	370	60	62	†60	61	+1
.....	.....	52	48¼	3,000,000	25	Chesebrough Mfg. Co	62½cQ	June 30, 24	700	49¼	50⅝	49¼	50½	+1½
118	110	115	113	1,000,000	100	do pfd	$1¾Q	June 30, 24	.....	.....	.....	.....	.....	.....
50	32¼	54⅞	39¾	10,000,000	25	Continental Oil	50cQ	June 16, 24	.....	.....	.....	.....	.....	.....
47½	15	20	11¼	1,500,000	25	Crescent Pipe Line	.....	Sept. 15, 23	.....	.....	.....	.....	.....	.....
168	85	149	110½	3,000,000	100	Cumberland Pipe Line	$3Q	June 16, 24	1,140	132	*149	132	144	— ½
117	87	105	94½	5,000,000	100	Eureka Pipe Line	$1Q	Aug 1, 24	40	95¼	96	95¼	96	+1
78	55	69¾	53	16,000,000	100	Galena Signal Oil	$1Q	June 30, 24	450	56½	60	56½	59½	+3½
105	104	103¼	100½	4,000,000	100	do new pfd	$2Q	June 30, 24	.....	.....	.....	.....	.....	.....
116	108	114	114	2,000,000	100	do old pfd	$2Q	June 30, 24	.....	.....	.....	.....	.....	.....
41¼	28	43¾	30	43,750,000	25	Humble Oil & Ref	30cQ	July 1, 24	1,900	36⅛	37½	35¾	36	— ⅛
171	115	161	126	20,000,000	100	Illinois Pipe Line	$6S.A.	June 30, 24	60	132½	134½	132	132	0
123	92	119	98½	39,222,750	25	Imperial Oil coupons	75cQ	June 2, 24	590	99¾	103	100	101	+1¼
103	78	100	88	5,000,000	50	Indiana Pipe Line	$2Q	May 15, 24	90	92	92	90	90	0
24¾	13¼	22¼	16¾	(sh)7,118,138	N.P.	International Petroleum	25cQ	June 30, 24	16,800	17⅝	19½	17⅝	19	+1½
168	123	162	122	$188,000,000	100	Magnolia petroleum	$1Q	July 5, 24	365	124	133	124	132	+9½
29	19½	25⅞	20⅝	6,362,500	12½	National Transit	25cQ	June 14, 24	800	21¾	21⅞	21⅝	21¾	— ¼
138	70	97	54½	5,000,000	100	New York Transit	50cQ	July 15, 24	20	64	64	64	64	0
109½	90	107½	80	4,000,000	100	Northern Pipe Line	$3S.A.	July 1, 24	85	82	85	82	84	+1
85¾	48¾	79½	58	60,000,000	25	Ohio Oil Co	50cQ	June 30, 24	1,800	59½	61¾	59½	61⅜	+2⅜
45¾	10½	43	28	10,000,000	25	Penn.-Mex. Fuel	.....	.....	1,900	30	33	29½	29½	— ½
700	152	269	194½	60,000,000	100	Prairie Oil & Gas	$2Q	July 31, 24	5,845	202½	217	202	214½	+13½
335	93	111	100	81,000,000	100	Prairie Pipe Line	$2Q	July 31, 24	1,215	103⅞	105	103	105	+1
212½	161	230	175	4,000,000	100	Solar Refining Co	$5S.A.	June 20, 24	50	181	187½	180	185	+10
116	87	100	90½	10,000,000	100	Southern Pipe Line Co	$2Q	June 2, 24	330	96	98½	94½	98	+2½
195	100	171	117	20,000,000	100	South Penn Oil Co	.....	Sept. 30, 22	690	130	147	132	140	+17
88¼	66½	89	81	3,500,000	100	Southwest Pa. Pipe Lines	$2Q	July 1, 24	20	86	87½	86	87½	+2
69⅞	49⅛	68⅜	54¼	221,706,668	25	S. O. Indiana	62½cQ	June 16, 24	10,300	55½	58⅞	55⅜	57¼	+1⅞
57½	36½	50¼	38⅝	8,000,000	25	S. O. Kansas	50cQ	June 16, 24	2,500	39½	40⅜	39	40½	+1½
133	80	120	101	16,784,047	25	S. O. Kentucky	$1Q	June 30, 24	6,300	110¾	114	110	112	+1
285	186	256½	198	3,000,000	100	S. O. Nebraska	$5S.A.	June 30, 24	900	238	247	235½	244	+16
48⅝	35⅛	55¾	37¾	225,324,650	25	S. O. New York	35cQ	June 16, 24	7,600	38¼	40¾	38¼	40¼	+2
320	270	336	275	14,000,000	100	S. O. Ohio	$2½Q	July 1, 24	150	282	294	280	287	+6
118	116	125½	118	7,000,000	100	do pfd	$1¾Q	June 2, 24	10	118	118	†118	118	+1
839	21	81	34	1,722,931	100	Swan & Finch	.....	Nov. 1, 19	160	40	47	40	43	+8
58⅛	35½	69¼	56¼	61,523,075	25	Vacuum Oil Co	50cQ	June 20, 24	12,200	61¾	63½	61¾	62¾	+1¼
28	19	29	25½	100,000	10	Washington Oil Co	.....	Jan. 31, 22	.....	.....	.....	.....	.....	.....

42 years Scientific Refining

H. B. S.

MOTOR OILS

A high grade product

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- FOR SAMPLES -
AND QUOTATIONS

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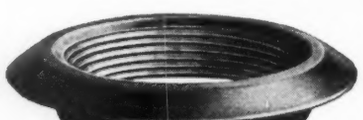
Cleveland, Ohio



A Barrel Flange of Pressed Steel

HERE is a pressed steel flange for steel barrels and drums now in use by many of the leading barrel manufacturers.

Thoroughly dependable in quality—low in cost, and can be welded more quickly and without danger of warping.

Made in ¾"—1½" and 2" sizes standard thread.

THE BETTCHER STAMPING & MFG. COMPANY

Cleveland Ohio

New York Curb Bonds

Week Ended July 25

	High	Low	Last	Ch'ge
Anglo-Am 7½s	102¾	102¾	102¾	+ ¼
Cities Serv do 7s C	94¾	94½	94¾	+ ¼
do 7s D	94½	94	94½	+ ⅜
Galena S O 7s	105½	105	105¼	— ¼
Gen. Pet. 6s	100	99⅝	100	— ⅜
Gulf Oil 5s	98¼	98	98⅛	+ ⅛
do 5½s '26	101⅜	101⅜	101⅜	+ ⅛
do 5½s '28	101½	101¼	101¼	— ¼
do 5½s '28	101½	101¼	101¼	— ⅜
Phillips Pet 7½ w w	103	102½	103	+1½
Pure Oil 6½s	95¾	94¾	95⅜	+ ⅜
S O New York 7s '25	101¾	101½	101½	0
do 7s '27	106	105¾	106	— ½
do 7s '28	106	106	106	— ¼
do 7s '29	106⅞	106⅝	106¾	— ⅛
do 7s '30	106¾	106½	106¾	— ⅛
do 7s '31	107¼	107	107¼	+ ¼
do 6½s	108	107½	107¾	— ⅛
Sun Oil 7s	102½	102	102½	— ⅜
do 6s	100¼	100¼	100¼	0
Tidal Osage 7s	104⅝	104	104	— ⅛
Union Oil Cal 6s '25	101¼	101¼	101¼	+ ⅛
United Oil Prod 8s	45	44	44½	0
Vacuum Oil 7s	107⅛	106⅞	107	0

New York Bonds

Week Ended July 26

	High	Low	Last	Ch'ge
Atlantic Ref deb 5s	98¾	98¼	98½	— ½
Barnsdall 8s	98¾	98⅛	98½	0
Calif Pet sf 8½s	98⅜	98	98⅜	+ ⅝
Empire G & F 7½s	94	92⅜	94	+1
Humble O & R 5½s	99⅜	99	99⅜	+ ⅜
Marland 8s Ser A	122½	122	122½	—2½
Mex Pet of Del cvt 8s	105¾	104¾	105¾	+ ⅝
Pan-Am P & T 7s	104¼	103⅛	104	+ ⅜
Pierce Oil deb 8s	102	99½	102	+2⅛
Prod & Ref 8s	110	110	110	— ¼
Sinclair Cons col 7s	91½	90⅜	91	+ ⅜
do 6½s	85½	84⅜	85	+1
Sinclair Crude 6s	100¼	99½	100	0
do 5½s	100	99¾	99⅞	— ⅛
Sinclair Pipe Line sf 5	84½	83¾	84	— ½
Tidewater Oil 6½s	104	103¼	103¼	+ ⅜
Union Oil of Cal 6s	102	101¾	101⅞	+ ⅛
Union Tank Car 7s	104¼	104¼	104¼	0

New York Curb Market

1923 High	1923 Low	1924 High	1924 Low	Par Value	Stocks	Transactions Week Ended July 25 Sales	First	High	Low	Last	Ch'ge
10	4¼	7	4¼	10	Ark. Nat. Gas	400	4¼	4¾	† 4¼	4¾	0
1⅛	.65	1⅛	.75	1	Boston & Wyo	1,300	.81	1.00	.81	1.00	+.19
7⅜	3⅜	6¾	3⅜	25c	Carib. Synd	5,500	3⅜	4⅜	3⅜	4	+1
195	128	155	132	100	Cities Service	1,490	136	139	136	137½	+1
70	64¼	74	67¾	100	do pfd	1,500	73⅛	73⅜	73⅛	73¼	— ⅛
6⅜	5⅞	7	6¼	10	do pfd. B	100	6⅞	6⅞	6⅞	6⅞	0
19½	12¾	16	15¼	10	do Bkrs. Sh	400	13½	13⅝	13½	13⅜	0
7⅜	1⅜	7⅛	2¼	N.P.	Creole Synd	31,800	6	* 7⅛	5⅞	7	+1⅛
18½	5	8	5	N.P.	Derby O. & R	100	3½	3½	3½	3½	+ ½
49¾	22	34¾	17½	N.P.	do pfd	.....	.....	.....	.....	.....	.....
1	.10	.60	.12	5	Federal Oil	1,000	.15	.15	.15	.15	—.05
2½	.23	.60	.30	10	Glenrock Oil	.....	.....	.....	.....	.....	.....
68¼	45¾	65	56¾	25	Gulf Oil Corp	4,200	57¼	58¼	57¼	58	+ ¾
9⅛	1	2¾	.50	N.P.	Gulf State O.&R	.....	.....	.....	.....	.....	.....
4	1½	2¾	1¼	N.P.	Kirby Petroleum	1,400	1⅞	2⅛	1⅞	2⅛	+ ⅛
5⅛	1⅜	4⅞	2	N.P.	Marland of Mexico	.....	.....	.....	.....	.....	.....
20¾	12⅞	19¾	16	10	Mountain Prod	4,900	17¾	19	17¾	18⅞	+1⅛
15¼	12¾	.....	.....	5	Mutual Oil Co	83,700	10	11⅛	10	10¾	+ ¾
15½	8¾	14	9½	5	do cfts	500	4⅞	5	4⅞	5	0
6⅛	3½	6¾	4⅜	5	New Bradford	400	41	41	38½	38½	—2
52	15¾	44	20	10	New England Fuel	.....	.....	.....	.....	.....	.....
21⅜	5	14	8½	25	New York Oil	3,000	.58	.60	.58	.60	0
1⅞	.45	.80	.50	10	Omar O. & G	500	1½	1½	1	1	0
13	¾	3½	1	N.P.	Peer Oil Corp	6,200	12¾	13½	12¾	13⅛	+ ⅜
14¾	9¼	16⅛	12¼	10	Pennok Oil	100	4⅝	4⅝	4⅝	4⅝	— ¼
6⅞	2	5¾	3⅞	N.P.	Ryan Consolidated	.....	.....	.....	.....	.....	.....
14	6¾	10¾	7¾	10	Salt Creek Cons	3,100	23½	24⅞	23½	24⅝	+1¼
25¼	15¼	26¾	19⅛	10	Salt Creek Prod	600	1½	1¾	1½	1¾	+ ¼
4⅜	.75	2½	.80	5	Sapulpa Refining	.....	.....	.....	.....	.....	.....
4	.65	1½	.30	5	Seaboard O. & G	.....	.....	.....	.....	.....	.....
13½	6	16	8	10	Tidal Osage	3,800	4⅞	5	4⅞	5	+ ⅛
10⅜	4	8¾	4⅝	5	Wilcox O. & G	.....	.....	.....	.....	.....	.....

Pittsburgh Stock Exchange

1923 High	1923 Low	1924 High	1924 Low	Par Value	Stocks	Transactions Week Ended July 25 Sales	First	High	Low	Last	Ch'ge
10	4¼	7	4½	10	Ark. Nat. Gas	2,085	4⅝	4¾	4½	4¾	+ ⅛
33¾	33	35¾	35¾	N.P.	Columbia Gas	.....	.....	.....	.....	.....	.....
27	22¾	28¾	26½	25	Lone Star Gas	1,460	27¼	27¾	27	27½	+ ¼
58	51	54¾	51	50	Manuf. L. & H	463	51¼	54½	51¼	54½	+3¼
19	11	16½	11½	1	Ohio Fuel Oil	110	12⅛	12⅞	12¾	12¾	— ¼
66	30¾	33¾	31½	25	Ohio Fuel Supply	4,635	32⅞	36	32¾	35¾	+2⅛
24	18¾	25½	22¾	25	Okla. Nat. Gas	747	24	25	24	25	+1¾
10¾	5¾	9¾	6	5	Pittsburgh O. & G	.....	.....	.....	.....	.....	.....
14	5¾	10½	7¾	10	Salt Creek Cons	2,430	8	8	8	8	0
13½	7	16¾	9½	10	Tidal Osage	300	10⅛	11	10⅛	11	+ ⅞
.....	.....	92	92	100	do pfd	.....	.....	.....	.....	.....	.....
29½	23¾	29⅛	27⅜	25	Union Nat. Gas	335	28¼	28½	28⅛	28⅛	0
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Pittsburgh Curb Market

1923 High	1923 Low	1924 High	1924 Low	Par Value	Stocks	Transactions Week Ended July 25 Sales	First	High	Low	Last	Ch'ge
.....	.....	2¼	2¼	N.P.	Arkansas Fuel w.i.	.....	.....	.....	.....	.....	.....
1½	.22	.76	.20	5	Colombia Synd	.....	.....	.....	.....	.....	.....
2¾	.26	.70	.30	5	Duquesne Oil	.....	.....	.....	.....	.....	.....
37	10	9¾	6	10	Forest Oil	100	6	6	6	6	.....
1¾	1	.15	.15	1	Grant Oil	.....	.....	.....	.....	.....	.....
68	46½	64¼	57	25	Gulf Oil Corp	100	57¾	57¾	57¾	57¾	0
.03	.02	.....	.....	1	Homer Union	.....	.....	.....	.....	.....	.....
24½	16⅛	21	21	N.P.	International Pet	.....	.....	.....	.....	.....	.....
.....	.....	4½	4½	N.P.	Lago Petroleum	100	4½	4½	4½	4½	.....
8¼	4	6	5	10	Marshall Oil	.....	.....	.....	.....	.....	.....
.36	.15	.39	.01	1	Mex. Wyoming	.....	.....	.....	.....	.....	.....
.....	.....	18	18	10	Mountain Prod	100	18	18	18	18	.....
2½	1⅛	2¾	1½	1	Oklahoma Eastern	640	1⅞	2	1⅞	2	+ ⅛
2	.60	.77	.77	10	Omar O. & G	.....	.....	.....	.....	.....	.....
22¼	7	8	5½	5	States Oil	1,070	6	6¾	6	6½	.....
.....	.....	14	10	10	Tidal-Osage, N. V.	.....	.....	.....	.....	.....	.....

*New High †New Low xEx Dividend